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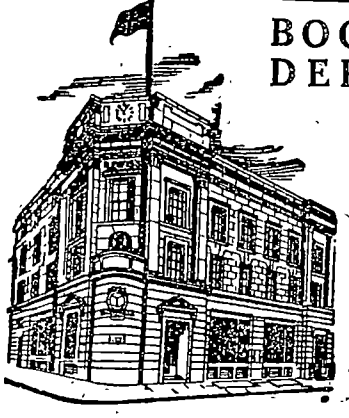

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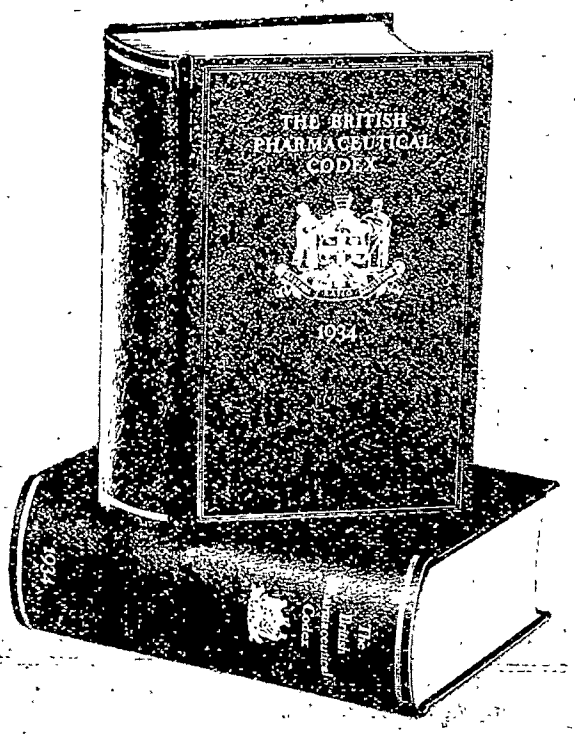

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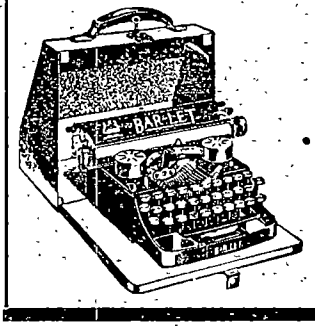

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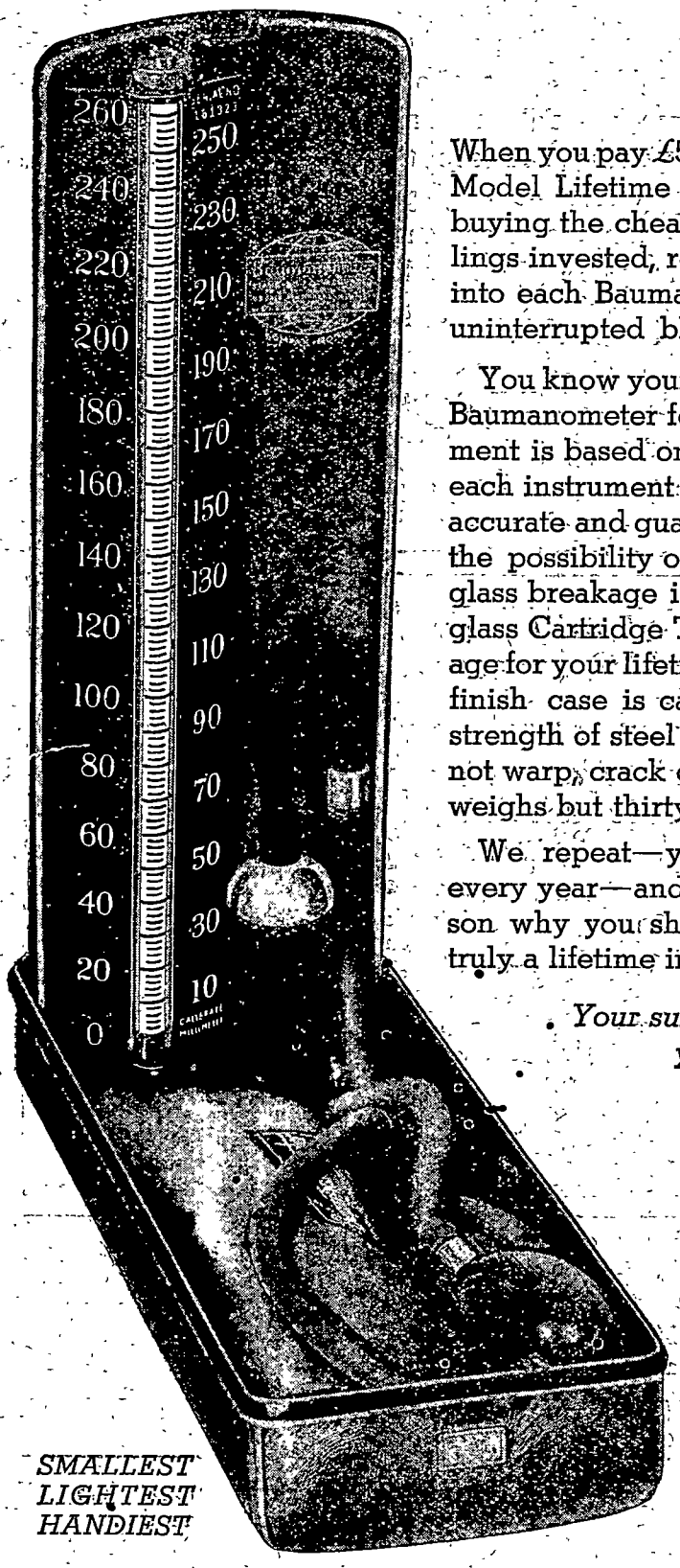

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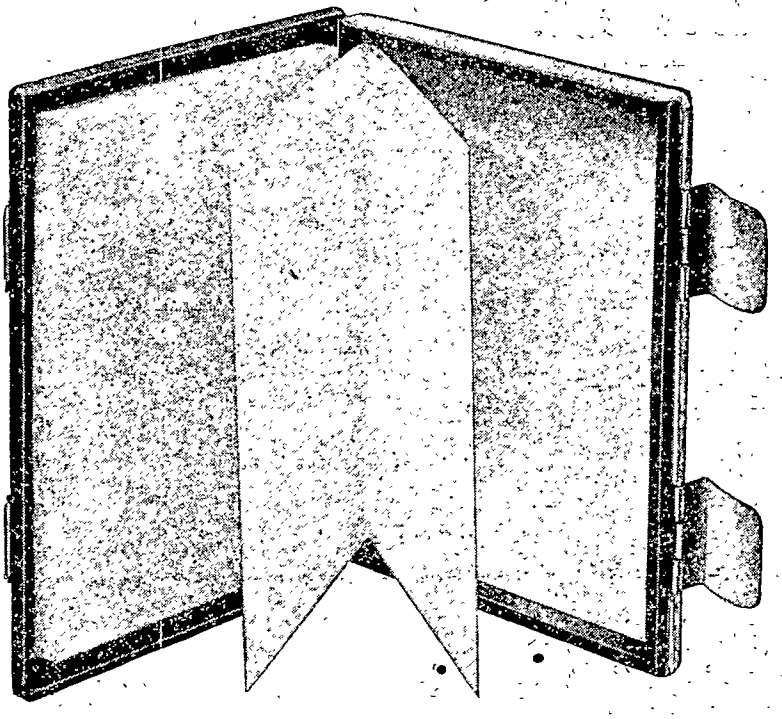

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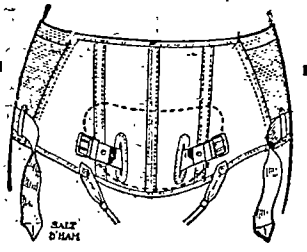

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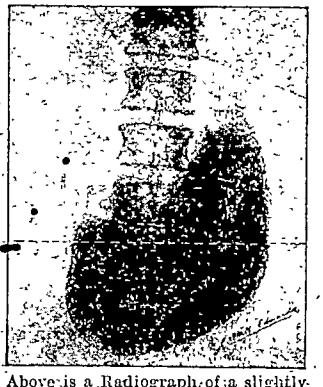

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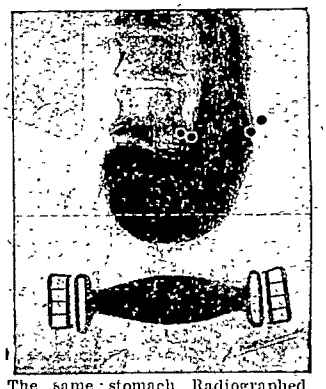

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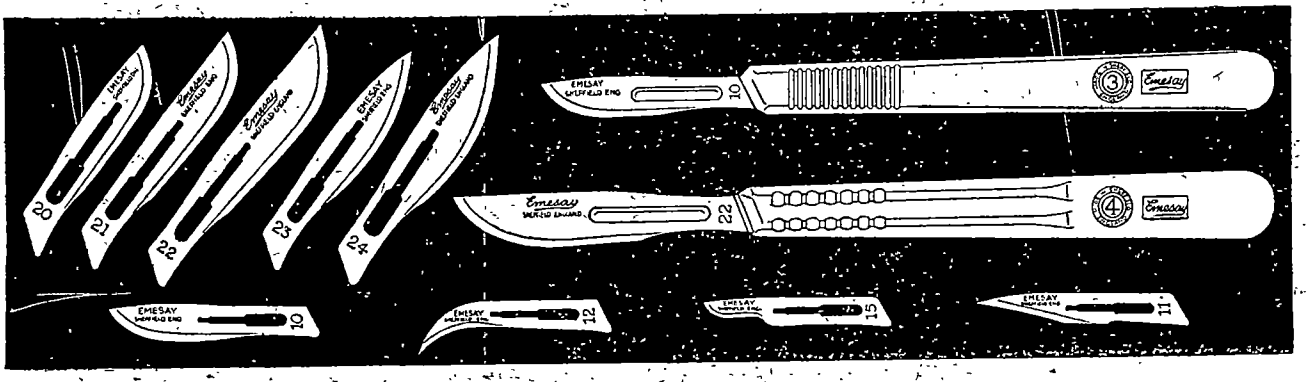

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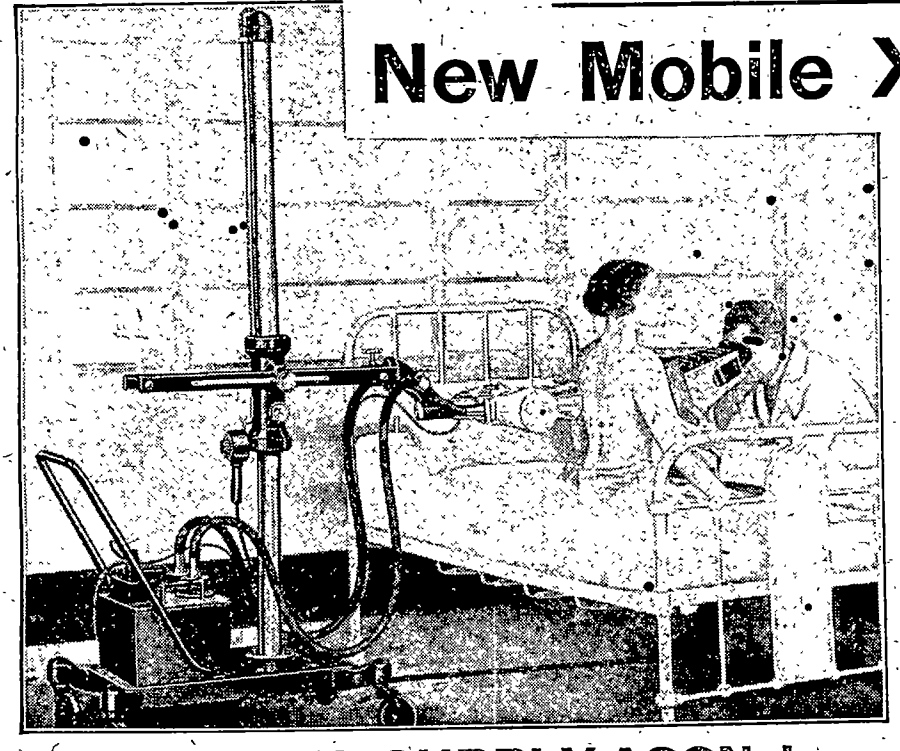

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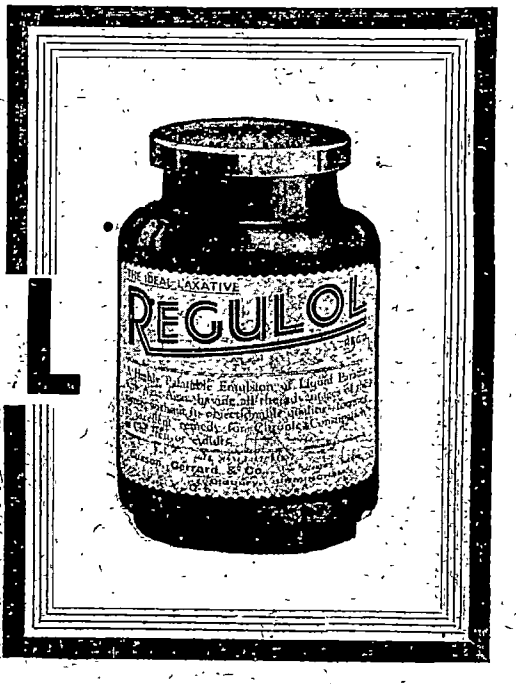

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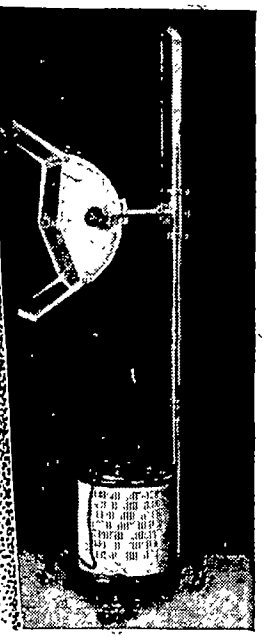

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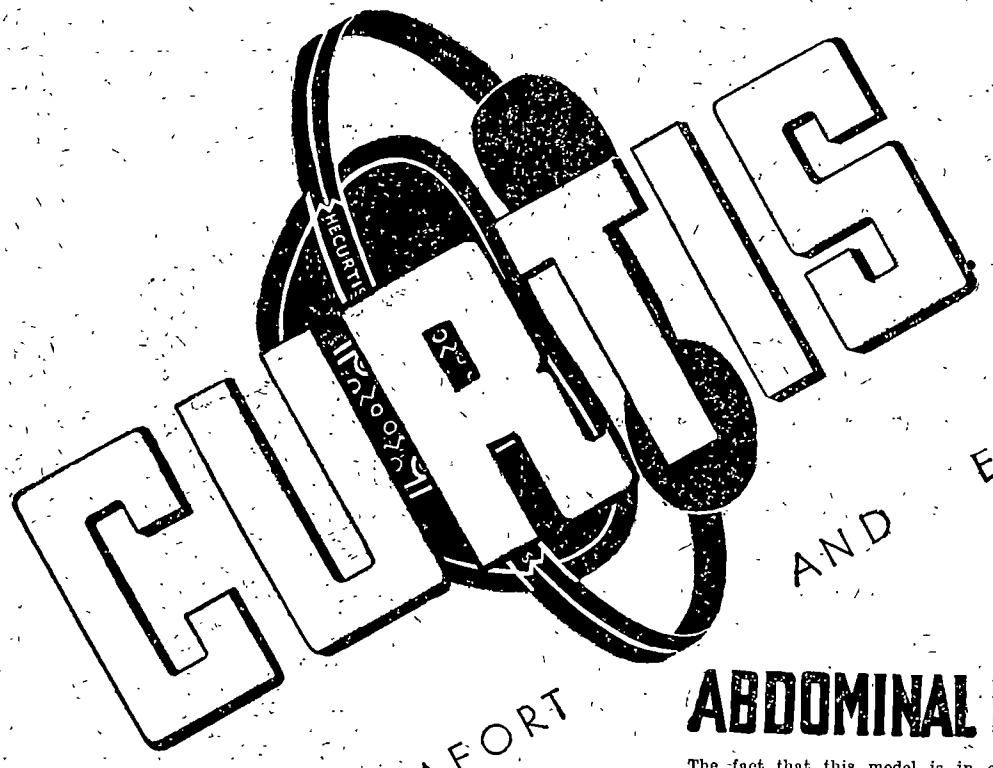

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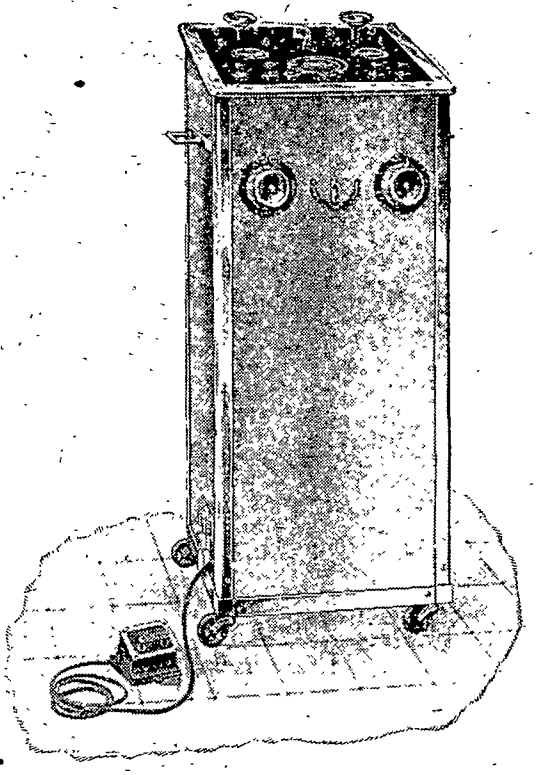

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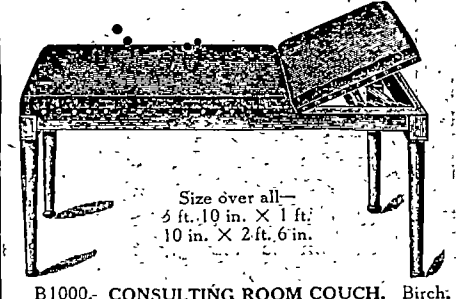

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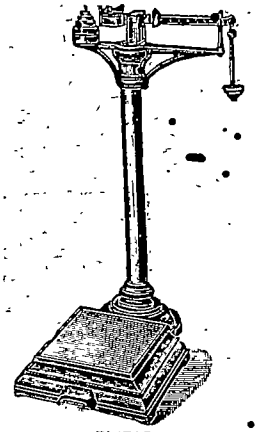

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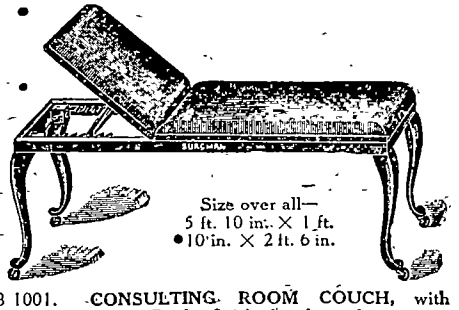

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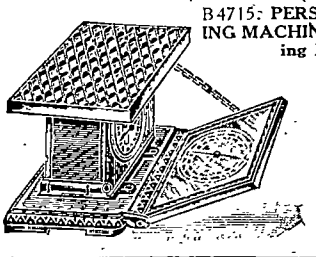

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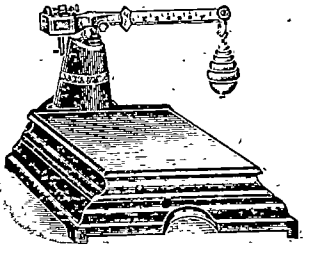

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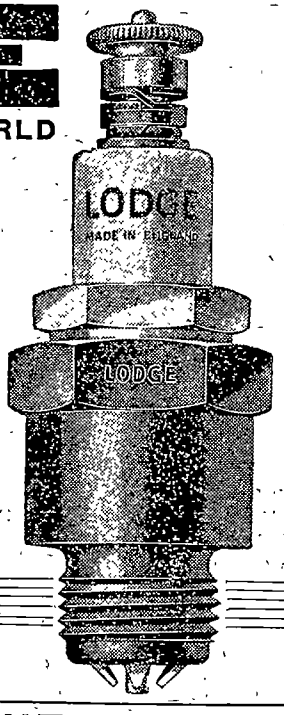

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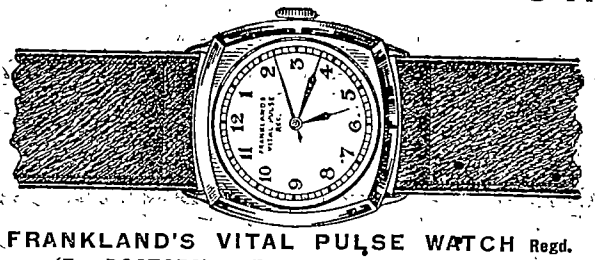

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FRANKLAND'S VITAL PULSE WATCH Regd.
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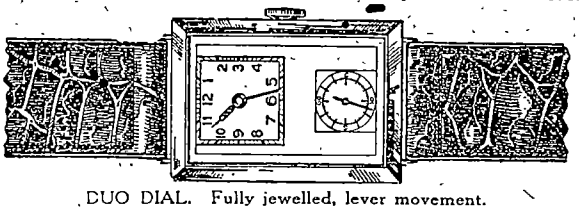

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Prepared in the Laboratoire de Pharmacologie Generale, 8, Rue Vivienne, Paris, and sold by most Chemists & Wholesale Druggists thr'ghout the world

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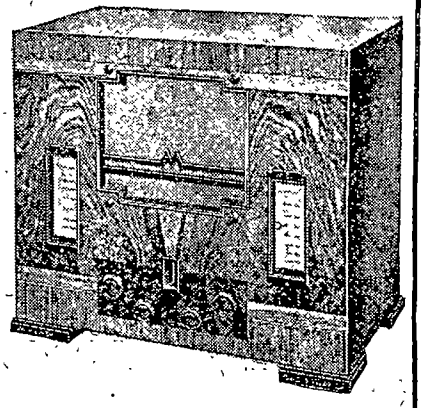
MARCONI

is so *dependable*



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THE IDEAL FOOD DRINK

¼lb. 9d. • ½lb 1/5. • 1lb. 2/9 • WEIGHT GUARANTEED

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Through exosmosis an abundant discharge is produced, and this may be followed by sneezing if the parts are especially irritable; but when repeated several times a week this procedure, in the opinion of a noted rhinologist, is "probably one of the most effective measures for reducing the congestion and irritability of the middle turbinate region."

Argyrol is not only decongestive, detergent and astringent, but it exerts a unique sedative and soothing influence on the inflamed mucosa which is most welcome to the distressed patient.

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The contents of one Tube will peptonise one pint of Milk.

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NON-POISONOUS

ANTISEPTIC AND DISINFECTANT

Verpine is a clear sherry-coloured fluid which mixes easily with water in any proportion and has a pleasant odour. It is a **powerful germicide;** but has negligible action on human tissue. It is being used with success as a general **antiseptic** and **disinfectant,** and in particular is recommended for local application, for vaginal douching, and as a mouth wash and throat gargle.

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Valentine's Meat-Juice

IN the Treatment of Weak Babies, in the Gastric and Enteric Troubles of Infants and in the Wasting and Febrile Diseases of Children, the Ease of Assimilation and Power of Valentine's Meat-Juice to Sustain and Strengthen has been Demonstrated in

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The 'Jelloids' are highly effective in the treatment of achlorhydric anæmia and indeed in all the simple anæmias in which massive iron therapy is indicated.

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You are cordially invited to apply for samples for clinical test.

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AP/25

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Contains Heart Hormone according to Prof. Zuelzer.

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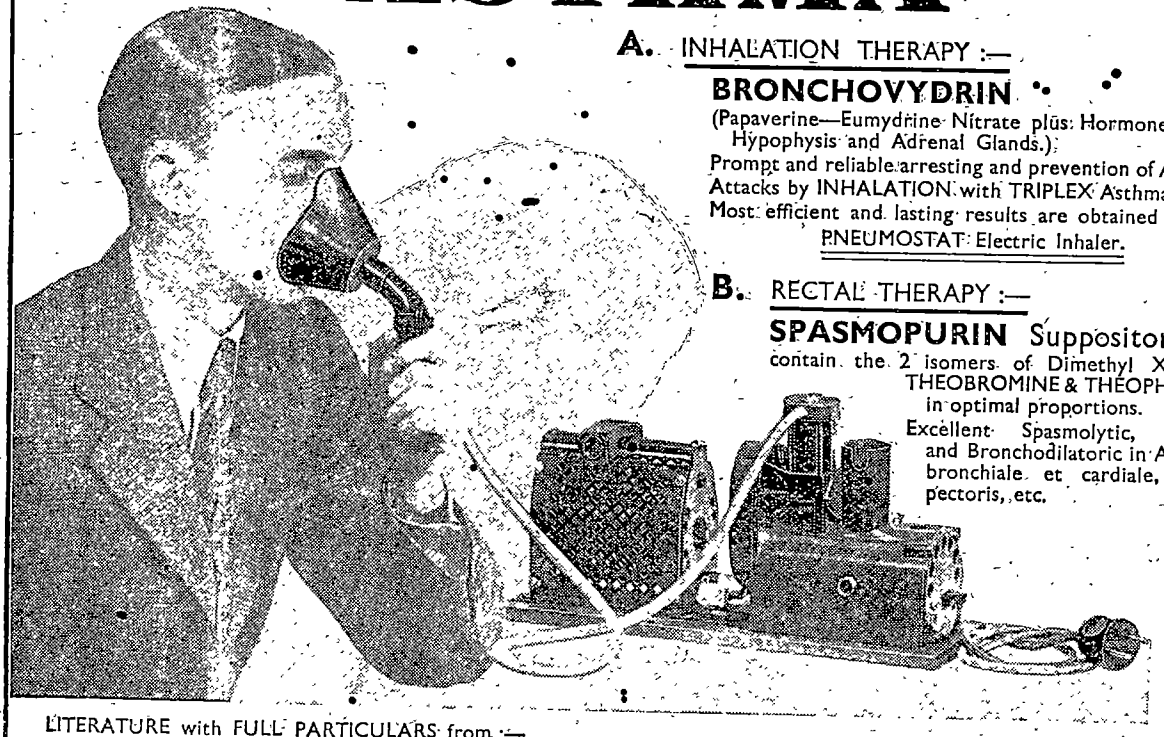

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ALMATA
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A reduction of 8d. per lb.
Quality Unchanged

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KEEN'S COMPLETE FOOD
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Please indicate by a X the type of case for which the sample is required.

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M.274

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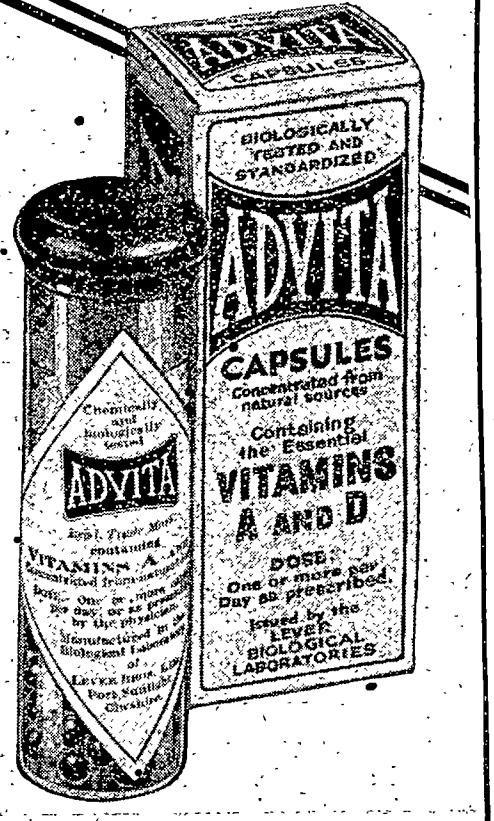

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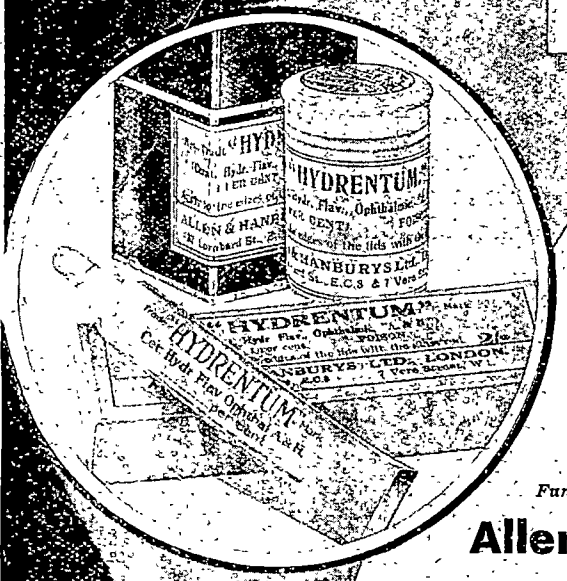
"A. & H."



"Hydrentum" is an improved Pagenstecher's ointment of yellow oxide of mercury.

It is prepared by a special process which ensures a perfectly homogeneous cerate.

It mixes uniformly with the lachrymal secretions.

"Hydrentum" is supplied in 0·5, 1, 2, 2·5, 3, 4 and 5% strengths.

In 5 gram pots with glass rod for applying the cerate. Also in tubes.

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Meanwhile we're not losing any sleep over any prospective destruction of our vested interest. For—like iodine, hot foments, rest, and sunshine—Sphagnol peat ointment is still, for its particular purpose, unrivalled and indispensable.

It's some decades since Sphagnol began healing broken and blistered skin. And now it is used more than ever. It's liked because it's gentle and soothing to the tender places, trusted because its action is safe and certain.

There's a reason for all this. In Sphagnol there is blended a potent peat distillate which is at the same time both soothing and antiseptic.

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Name .....

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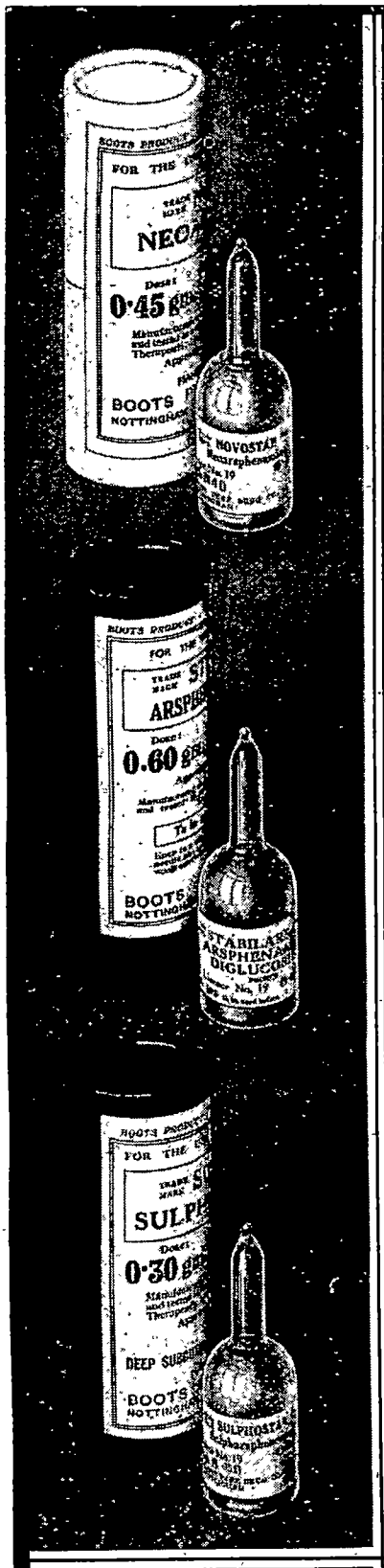
(Address to Peat Products (Sphagnol) Ltd., Dept. B135, 21, Bush Lane, London, E.C.4.)



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A STABLE compound of arsphenamine and glucose supplied IN SOLUTION READY FOR USE.

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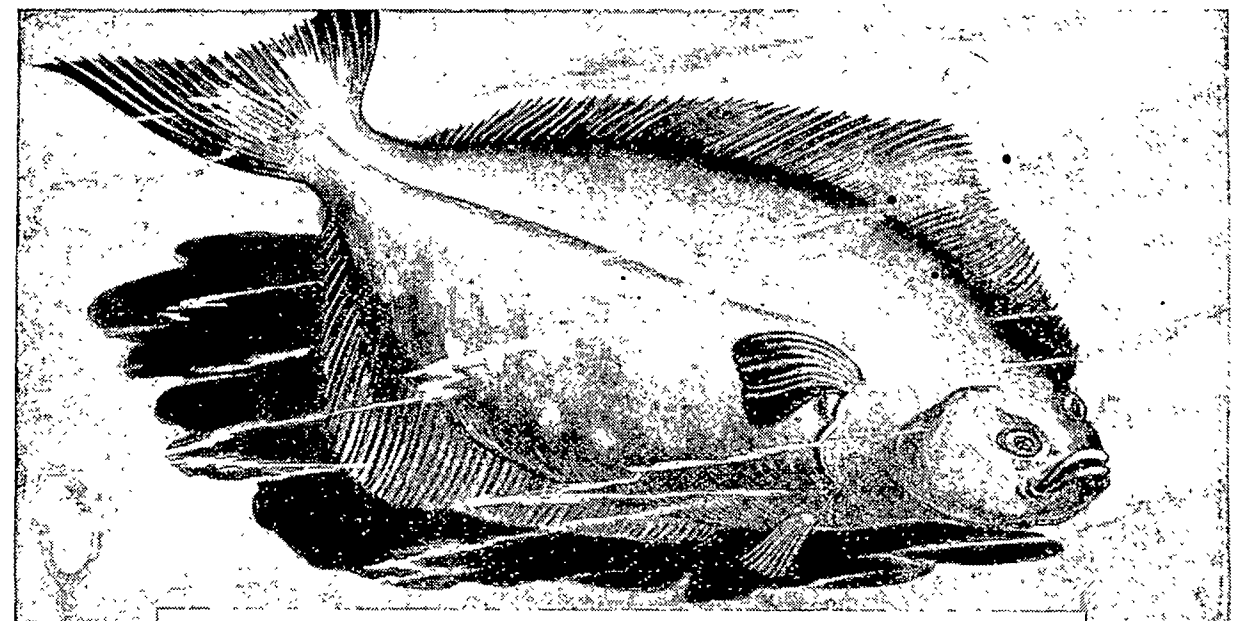

"AS BIG AS A HALIBUT"

The Halibut is the largest of all flat fishes — but there are Halibuts and Halibuts. They vary in length to such an extent that the comparison "As big as a Halibut" means nothing.

Yet statements equally loose and unscientific are made with reference to Halibut Liver Oil. For example — "50 to 60 times the value of cod liver oil" is an entirely valueless comparison, for cod liver oils themselves vary in vitamin potency as widely as fishes vary in size and weight.

Precise Standard of Comparison now available.

Crookes' Collosol Halibut Liver Oil contains not less than 300 times as much Vitamin A and not less than 40 times as much Vitamin D as **B.P** cod liver oil of **fixed vitamin value,** or, as formerly expressed, 80 times as much Vitamin A as the **finest cod liver oil** obtainable. In whatever form Halibut Liver Oil is prescribed the name "Crookes" should be insisted on, for Crookes' is the only standardised and guaranteed All British Halibut Liver Oil available.

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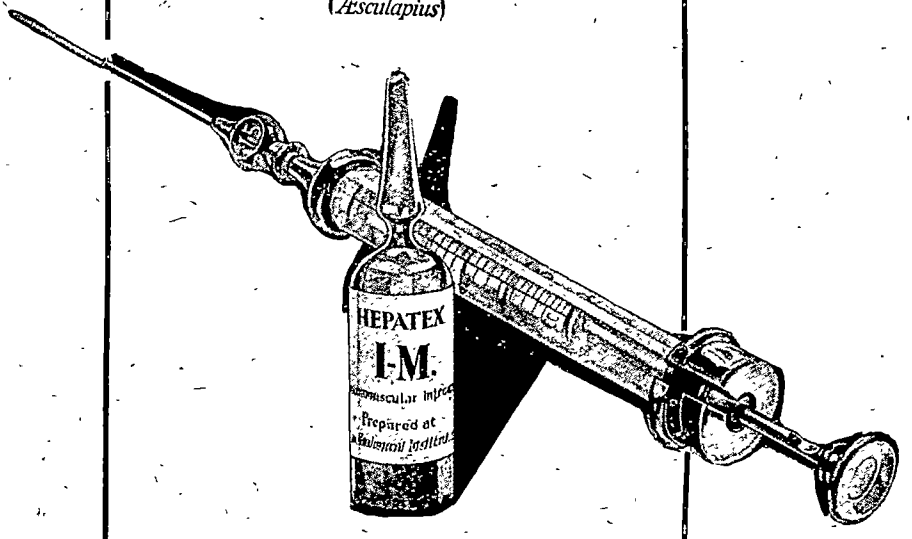
(*Æsculapius*)



LIVER EXTRACTS

for parenteral administration in the anaemias.

HEPATEX I-M.

(Intramuscular)

For use when the red cells are not lower than 1,500,000 or when oral administration is not desired.

HEPATEX P.A.F.

(Intravenous)

For critical cases; obviates blood transfusion even if the red cells are as low as 1,000,000, and haemoglobin only 20%.

HEPATEX COMPOUND

(Intramuscular)

H.C.I.

A combination of Hepatex I-M., iron, arsenic, phosphorus, and strychnine; for secondary anaemias and debility.

For oral administration—

HEPATEX and HEPATEX with IRON.

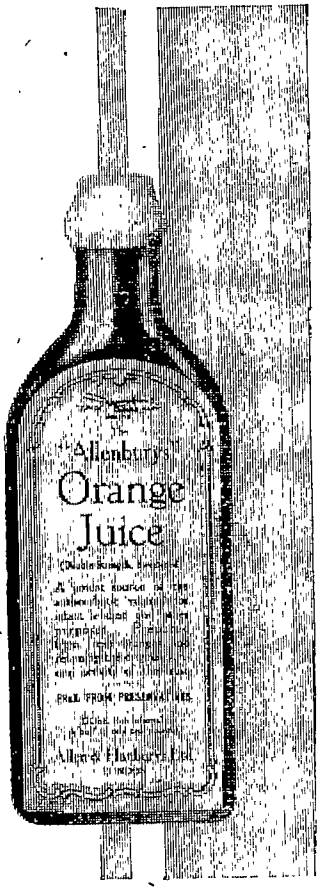
British Products of
EVANS' BIOLOGICAL INSTITUTE.

EVANS SONS LESCHER & WEBB Ltd.

LIVERPOOL LONDON DUBLIN

Double Strength
Sweetened

"Allenburys"
Orange Juice



Supplies a potent source of the anti-scorbutic Vitamin C in a form convenient for infant feeding and other purposes.

It is equivalent to *double strength* fresh orange juice and retains its full activity for a long period.

Employed with advantage in all cases in which fresh orange juice is used.

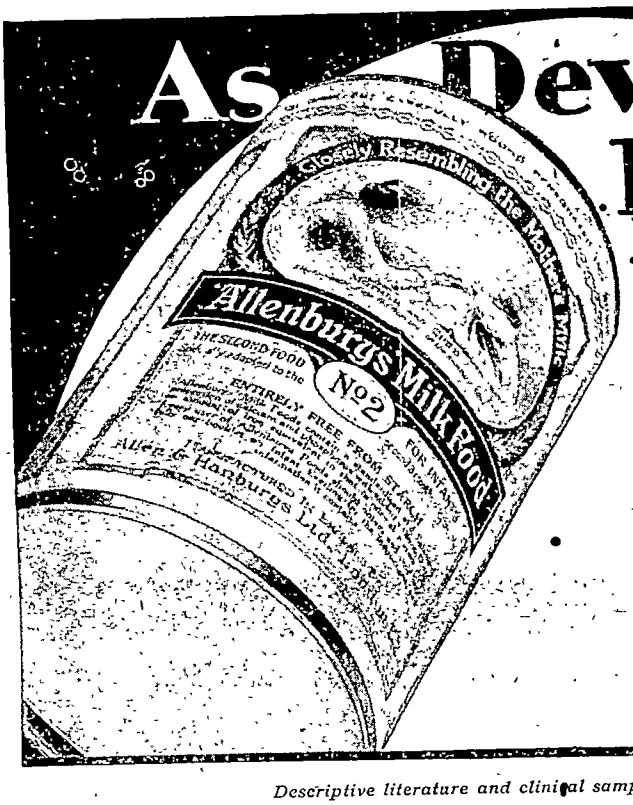
May be taken by children and adults in the form of a delightful drink by diluting with about ten times its volume of plain or aerated water or milk. Contains no alcohol or chemical preservative.

Further particulars and clinical sample will be sent post free on application.

Allen & Hanburys Ltd., London, E.2

Telephone: 3201 Bishopsgate (12 lines). Telegrams: "Greenburys Beth London."

As Development Proceeds



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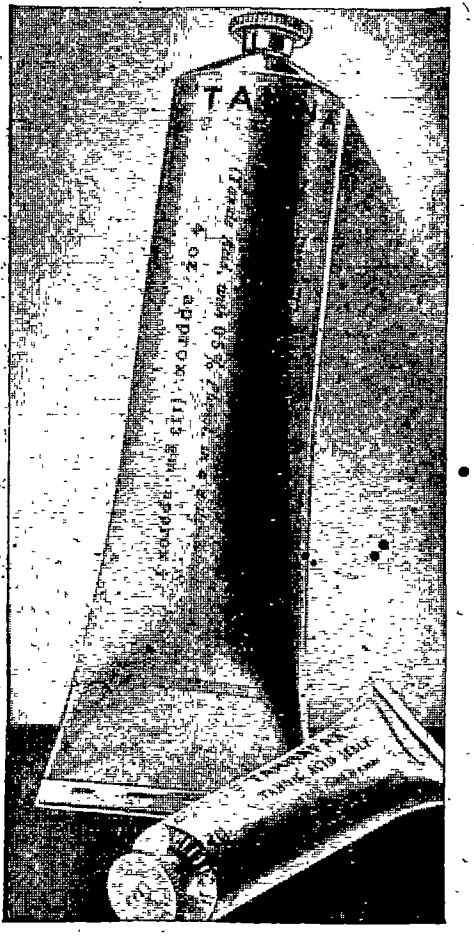

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BRITISH MEDICAL JOURNAL

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION

LONDON: SATURDAY, SEPTEMBER 1st, 1934

EDUCATIONAL NUMBER, SESSION 1934-5

THE TRAINING OF THE MEDICAL PRACTITIONER

BY

SIR HENRY BRACKENBURY, LL.D., M.D.

Medical education, like all other education, is a co-operative business. The idea that even the infant mind is a *tabula rasa*, a clean slate on which the parent, the teacher, environment in general, may write what it will, has long since been discarded. But even the infant mind, conditioned, as to the impressions that may be made upon it, by the biologically inherited number, character, and connexions of the brain cells, is not a passive instrument, but, at least after those first few months of extrauterine life of which we really know so little, progressively takes a larger and larger part in itself determining what impressions it will receive and how it will react to them. By the time adolescence is reached nature and nurture, especially the deliberate discipline of the schools, have produced or disclosed limitations, of a greater or less degree of severity, so that, with regard to all subsequent education, whether of a general or of a technical character, the contribution of the student is of at least equal importance to the contribution of the teacher. In medical education, as in other spheres, this is sometimes forgotten, or at least not always given its full emphasis, and it is by no means uncommon, when the result is not conspicuously successful, for the teaching to be blamed when the student is at fault, and vice versa. The consideration, therefore, of what these respective contributions ought to be should be of substantial value and importance. Though their formulation and definition is not easy, and though others might prefer to set them out quite differently, the attempt may be worth making. The contribution of the medical school may be considered first, and then the contribution of the student.

Guidance by the Medical School

The first function of a medical school or faculty is that of *guidance*. Its performance is sometimes lacking. It is true that in all medical schools a proportion of the students will have fathers or near relations who are themselves members of the medical profession and from whom it may be supposed that a considerable degree of guidance will have been, and will continue to be, forthcoming: but even in these cases the responsibility of the school is not removed, and in the case of those students who in this regard are not so fortunately placed, the lack of guidance may even, in greater or less degree, spoil a whole career.

The main guidance required, either at the beginning of studentship or at a later period, is, of course, as to the qualifying examinations which should ultimately be taken; the order and proportionate emphasis which, in the case of each student, should be given to the various parts of the course leading up thereto; and the particular branch of professional work or post-graduate study upon which it seems most appropriate or advisable for the student to enter. This is a responsible task, and naturally requires close attention to individual characteristics and abilities. It may be held to be one of the most important duties of the dean of the school or faculty.

Another direction in which guidance may reasonably be expected from every teacher is in the prescription and supervision of private reading and of library and museum study. Further, the medical course is so full and at first so bewildering that the student requires to be given a sense of perspective. In the words of the Report of the British Medical Association on Medical Education,[1] he

"should not be left in the dark as to the plan which is being followed by a teacher of a subject, as to what are the outstanding problems with which a subject deals, and as to the place which these problems occupy in the general scheme of medical learning."

The Student's Objective

Guidance in these various directions cannot have its full value unless there is agreement as to the objective. To the generality of students this objective is the early entry upon general medical practice. For others, before the course is completed, it becomes definitely a preparation for further study leading to practice in some special field. For a few from the beginning this ultimate intention is a fixed goal. The second of these classes may require guidance with regard to some prolongation or modification of their years of clinical study; the third class may be directed in such prolongation or modification at an even earlier period. It is, however, generally held in this country that even for those who propose to engage in a special branch of practice, a common course of study intended primarily as an introduction to general practice, and even a relatively short experience of such practice, is the best of preparations.

This view is not universally accepted. In America and elsewhere, where a large proportion of the students have the avowed intention of work in a limited field, the medical schools have tended to adapt their courses to such ends. To-day, however, there is pronounced reaction from such undue specialization, both in practice and in education, and the members of the American Com-

[1] *British Medical Journal Supplement*, April 21st, 1934, p. 192.

mission on Medical Education unite in deprecating the fact that "a large proportion of recent graduates limit their practices to a specialty often without a sufficiently broad previous clinical experience." The objective of the ordinary medical course may, then, be accepted as being correctly stated in the initial paragraph of the British Medical Association's report:-

"The primary object of the medical curriculum should be to produce on its completion a practitioner who has acquired a right attitude towards professional duties and responsibilities, an ability to deal reasonably in the early days of practice with such patients and conditions as may confront him, and such basic knowledge and mental training as will enable him to profit continuously by daily experience. It should at the same time constitute such a co-ordinated course of study as will, by its mental discipline, make the student a really educated person and not merely a skilled technician."

Lack of Co-ordination in Teaching

No doubt the main function of the medical school or faculty would be commonly stated as that of giving *instruction*. The difficulties in the way of its complete and perfect performance seem to arise from two facts. One of these is that the qualities necessary in a first-rate teacher are not invariably combined with those required from an expert in one particular subject or in a first-rate laboratory worker, research worker, or clinician; and it is for the possession of these latter qualities that many members of the staff of a medical school, or the hospital connected therewith, are primarily appointed. The other fact is the immensity of the field of knowledge that has to be covered and the impossibility of dealing with more than a relatively small portion of it in the time at disposal.

It is from these two facts, neither of which is completely remediable, that most of the recently expressed complaints as to the inadequacy of medical education arise. If the efficiency of the teaching of the various subjects of the curriculum is grossly unequal; if each subject is regarded as a largely independent section of study; if, as would then be natural, each teacher aims at imparting to the student as much knowledge of his own subject as is possible in a given time; then the student may, indeed, pick up a considerable amount of useful knowledge, and this may even be such as will enable him to pass the necessary examinations. Yet it is certainly not "a co-ordinated course of study," and must leave at least an appreciable number of the students very imperfectly equipped as medical practitioners capable of profiting fully and "continuously by daily experience." This truth is recognized by the authorities of every medical school: it does not everywhere find an application in the regulation of the actual teaching.

The remedy is to concentrate upon the general course and not upon particular subjects or sections of the curriculum; to bear in mind the limited nature of the immediate objective at which the course is aimed; to select the team of teachers with great care, and not to restrict each teacher too narrowly to some special portion of the curriculum, but to make use of him in any part thereof to which he can usefully contribute.

Need for a Widened Outlook

There is a rather different aspect in which the instruction given in some medical schools is said, not without some reason, to be wanting. Even if the teaching be uniformly excellent, fully co-ordinated, and purposefully restricted it is possible that it may be presented from a point of view which takes too limited a cognizance of certain conditions with which the student will be confronted almost from the moment that he enters upon practice. He will be concerned with human personalities, not merely with the cadaver or with bodies exhibiting some pathological process; with the prevention of disease and the promotion of health, not merely with the cure of illness; and with man as a social unit in all sorts of untoward surroundings, not merely with a patient within the narrow bounds of a hospital. The public has become greatly exercised about these things. Hence arises the insistent demand, not yet fully met in any medical school, that teaching should be throughout more largely on the living body, and have regard to the mental as well as the physical; that the preventive and constructive aspects of medicine should permeate the whole course; and that medicine should be presented as a social agency taking its proper leading place among others.

Variety in Teaching Methods

This leads up to the methods of instruction, which need some consideration. Many methods are employed in all schools—lectures, demonstrations, dissection, laboratory work, discussions, controlled reading, supervised clinical duty, what is called (particularly in America and Germany) the "seminar," and so on. There is a tendency for one of these methods, associated with those others most closely allied to it, to become predominant in different countries. Thus Mr. H. S. Souttar, in the Educational Number of the *British Medical Journal* two years ago, writing with special reference to clinical instruction, describes the German method as demonstration; the French as attendance; and the English as apprenticeship. These differences, though real, are tending to disappear; and in each of the above-named methods there may be numerous modifications. This variety, whether in different countries or in different schools within the same country, is a good thing. In medical education, as in other education, stereotyping is fatal: a strict uniformity, either in time, order, or method of instruction is strongly to be deprecated. Sir Norman Walker, in his presidential address to the General Medical Council in May last, said: "It is not possible to frame a model curriculum which will suit every country or every school in any country, and no hard-and-fast arrangement of subjects is possible, even if it were desirable"; and the British Medical Association's report states that "it is desirable to allow—even to encourage—a wide liberty of choice in the different schools, provided that certain broad general requirements are satisfied."

Lecture Theatre and Laboratory

There are, however, two of the methods of instruction ordinarily employed upon which particular comment may be made. The systematic lecture course has been paramount in most schools perhaps too long. It is a survival of the days when good textbooks did not exist or were not easily come by, and when habits of speaking and hearing varied widely from those cultivated or common to-day. In Elizabethan times, and in the seventeenth and eighteenth centuries (as particularly illustrated in the spheres of the stage and the pulpit) the English people possessed a range and dignity of speech and a power of attentive and appreciative listening which to-day they have largely lost. Even in Scotland it is not what it was. Yet the spoken word, even in a set discourse, still has its value; and, as Sir Clifford Allbutt said in his address on professional education nearly thirty years ago, "reading of textbooks at home is eating sawdust!" The opinions of the modern student as to the limitations of the value of lectures are worth noting, and may perhaps be a better guide than those of the lecturers themselves. In a report recently issued by the Manchester University Medical Students' Representative Council it is held that "most necessary changes" are that "systematic lectures should be drastically reduced in number," that "attendance at all lectures should be voluntary," and that

"where lectures must be given, then the function of the lecturer should be: (*a*) to present a view of the subject as a whole; (*b*) to state principles and so give coherence to the subject; (*c*) to bring textbooks up to date; (*d*) to emphasize the salient points in the textbooks by illustrations from the lecturer's own experience; (*e*) to vitalize the subject."

Laboratory practice is in some danger of usurping the place of undue prominence which is being vacated by the set lecture. It has a very important place; but it is time-consuming and is quite often directed to wrong ends. It is probably unnecessary to say more than that many laboratory experiments frequently carried out are relatively unimportant and uninforming, and that, in the words of the American Commission on Medical Education, "the laboratory is used too much as a training in manipulation rather than as a means of illuminating and illustrating the subject-matter and familiarizing the student with some of the general principles and methods."

Learning by Doing

The third important function performed by the medical school is the affording of *opportunity*. It has been said that only a small portion of medicine can be taught to the student; the best that can be done is to enable him to learn; and it is a commonplace that, in some directions at any rate, the best way of learning is by doing. The way to much effective knowledge by the medical practitioner lies along this path. In the Bulletin on Medical Education of the Health Organization of the League of Nations it is said that "several countries complain that the majority of students look and listen but do not act. They remember what they have seen and heard, with their heads, but not with their fingers."

It is the possibility of the adequate performance of this function of affording opportunity that should be a determining factor with medical schools and faculties in admitting students. The number of students may, in respect of opportunity of learning, easily become excessive. With regard to lectures, demonstrations, class teaching, the numbers, within fairly wide limits, do not matter, but when they affect the easy securing of parts for dissection, the actual performance of suitable laboratory experiments, the possibility of making the required number of post-mortem examinations or of maternity attendances or of anaesthetic administrations, the gathering of a sufficiently wide experience during clerkship or dressership, or the securing of clinical assistantships or house appointments, then the actual number of students accepted, and the proportion of hospital beds and of out-patient attendances to such number, become of the utmost importance. If the numbers are properly adjusted it should be possible for every student to have practical experience in the performance of all those minor operative procedures, whether clinical or pathological, whether medical, surgical, or obstetric, which will be essential for him in the carrying on of his daily practice after qualification. Seeing these things done by others is not enough; it is essential that he should have actual experience in their practice. Having been done once or twice under supervision they no longer present the formidable aspect which has in many cases prevented some medical practitioners ever attempting them. Yet a practitioner's equipment is awkwardly and inconveniently incomplete without this skill.

Clinical Experience and Responsibility

The student needs to be afforded opportunity not only for gaining clinical experience and acquiring manual skill, but for realizing and exercising a sense of responsibility. In this respect the average student in Great Britain and Ireland is already in a relatively better position than the ordinary student elsewhere. The requirement of the periods of clerkship and dressership gives him this advantage; but the opportunities so afforded are not always as full as they might be. The responsibility placed upon clinical clerks and surgical dressers varies very considerably.

Further, in regard to actual practice, it is perhaps a little curious that the only specific numerical requirements of the General Medical Council with regard to the personal performance of duties while a student are concerned with post-mortems, maternity cases, and the administration of anaesthetics. It is no doubt assumed that wider opportunities will be given and wider responsibilities undertaken during the holding of a clerkship or dressership. Nevertheless it remains true—and this must be to some extent inevitable—that on qualification the student has not acquired self-reliance or an adequate sense of responsibility, and is, indeed, very imperfectly instructed in the nature of the responsibilities which then fall upon him. It is for this reason that the American Commission insists so strongly upon the importance of the "internship," and that the British Medical Association's report suggests for every student a final clinical period of from six to nine months after the main part of the qualifying examination has been passed. This period, involving a maximum amount of clinical experience and responsibility under supervision, would usually be spent either in a definite appointment to a hospital department or clinic or as a pupil to an approved general practitioner or medical officer of health with a sufficiently wide range of services under his control. With this would be combined specific instruction in the legal, ethical, and social obligations of a medical practitioner. The difficulties of carrying out such a suggestion are obvious, but they are probably theoretical rather than actual, and can certainly be overcome by good will and judicious selection. Of the importance and value of such an experience on the threshold of independent practice there can be no doubt whatever, and of the real necessity of some such experience at this stage nearly all observers and critics of medical education are quite convinced.

The Imponderables

The last function of a medical school or faculty that need be mentioned here is that of *inspiration*. It must be a poor school or university which cannot supply this, either through its general atmosphere or through the personality of one or more of its teachers. It is a real thing, and a necessary thing for the medical practitioner. Without it the student's acquirements will be imperfect, and his work, both during his studentship and thereafter through his professional career, a burden, or at least a source of infinitely less satisfaction than it might otherwise have been. In the words of Littré, "La puissance de l'éducation consiste à augmenter le nombre des motifs dans l'ésprit de l'individu." If the student is not put in the way of acquiring, or of developing, some width of culture, a zest for knowledge, a love for his work, a real sympathy with human suffering and trouble, a profound respect for confidence reposed in him, an appreciation of nobility of character and of the dignity and peculiar requirements of professional life, to that extent will the contribution made by the medical school to his medical education have failed of its complete purpose, and to that extent will he pass out from it a liability rather than an asset to his profession and to the community.

The Student's General Education

As was said at the very beginning of this article the contribution to medical education that must be made by the student is no less important than that made by the

medical school or faculty. The contributions to be expected from the student may, however, be considered much more briefly than those required from the school, for, except with regard to the first of those about to be mentioned, they lend themselves much less readily to analysis or to detailed criticism.

The first, and very important, contribution from the student must be an adequate *previous equipment* in knowledge and intelligence. There can be no reasonable doubt that the minimum of present requirements in this respect is definitely too low. This minimum level should be appreciably raised, and the present is a convenient time for effecting this improvement, as the rate of entry into the medical profession might be somewhat reduced without any public loss. No profession should be entitled to claim the epithet "learned" more surely than the profession of medicine. It has an enormous responsibility to the public. It possesses the confidence of the public, to an extraordinary extent from individual members of the community, and to a great extent from the community as a whole. It exercises, therefore, a very considerable degree of authority over public thought, and great influence over many persons. The medical practitioner by reason of this should, as is said in the League of Nations Bulletin on Health Education, in the best sense of the words, "belong to the élite." His professional knowledge should be enhanced by general culture." Yet this does not universally obtain. It cannot be denied that there is a small substratum within the profession of whom this is far from being true, whose general education can only be described as poor, whose interests are extremely narrow, and a few of whom seem incapable of realizing or appreciating fully the obligations of professional life. It is only three years ago since the following was written:

> "Our students are the most uninteresting of men. They are ignorant of either art or literature. They only read sporting papers and cheap magazines. They do not even know their own language, nor can they spell. They are in fact semi-illiterate."

That is American, and is not true of this country, even of a small minority of students; but it illustrates very vividly the dangers of too low a standard of general education being allowed to qualify for admission to the medical course. Exactly to what degree or in what particular direction the minimum standard should be raised may be a matter of controversy, and there should certainly be a wide range of choice in the subjects that may be taken; but it is not unreasonable to suggest that at least a pass in something roughly equivalent to the intermediate arts examination of a university is not an unduly high requirement as a test for entry upon the profession of medicine.

Scientific Groundwork

There is a common agreement that the preliminary equipment of the medical student should include a training in science, and that this training should embrace not merely a suitable grounding in physics and chemistry, both inorganic and organic, but also in the principles of general biology. The biological approach to medicine is essential—should now, in fact, be regarded as axiomatic—and is becoming more and more important each year. No very profound knowledge of these sciences need be looked for at this stage—nor is it a *sine qua non* at any stage—but an understanding of their principles, methods, and main elementary facts cannot be dispensed with. Nor does it matter where, or exactly at what stage of previous education, such understanding is obtained. It may easily be acquired, along with some other studies, during the two years following the passing of the School Certificate examination, or its equivalent, at many schools, or as part of a general course at some university or university college; but it should be required to be completed and tested prior to the commencement of the fifty-seven months of the medical course proper. In the words of the British Medical Association's report:

> "The student should then at least know how to think, how to read with comprehension and reasonable fluency one language besides his own, and how to express himself, both in speech and in writing, logically and clearly in his own language. He would have been introduced to some great literature, and have some notion of historical sequence and perspective. He would understand scientific method and scientific principles of observation and deduction; and he would have acquired such a knowledge of the main facts or problems of the physical universe and of living organisms as to enable him to pass to the study of the human organism and its environment with interest, intelligence, and profit."

Without some such previous equipment the student will certainly be unable to complete his medical course within the prescribed minimum period, will be unable to profit fully by the sequence of studies undertaken in that course, and will thereafter remain lacking in some of the mental content and quality which would enable him, with increasing experience, to render the complete complement of service. For these things, if not taken in their proper place, cannot so well be supplied thereafter, and will probably not be supplied at all.

Habits of Work

A second contribution which the student may be expected to make to his medical education may be described as *assiduity*. This is defined in the *Oxford English Dictionary* as "constant or close attention to the business in hand, unremitting application, persistent endeavour, perseverance, diligence." Too much, of course, cannot be expected of the youth of 17, 18, or 19 years of age. He comes, probably, fresh from his secondary or public school, where he has been accustomed to his weekly and terminal holiday, possibly with some small task in which he can occupy some of his leisure not unpleasantly or unprofitably. In his early years of medical study it is likely that he will expect a continuance of similar conditions, and may be able to contrive them. But in his later clinical years he will become more conscious of the life in front of him, and will realize that the necessities of his work require him to put in six days work a week instead of five, and make his working year one of nearly twelve months instead of little more than nine. Assiduity, in the full meaning of the word, will, indeed, be required of him if he is to complete his course in the five years or so in which he may hope to accomplish this in the absence of illness or other misfortune. This is no bad preparation for the conditions of life in a successful general medical practice; and the exigencies of clerkships, dresserships, and other time-limited duties will make the taking of regular vacations at stated periods impossible. In fact, the normal vacation times may be found among the most profitable opportunities for a more extended clinical experience. At any rate, the average student must expect to make his contribution along these lines by an increasingly strenuous period of steady, but, it is to be hoped, not disagreeable work.

A third contribution to be made by the student is *character*. It is often circumstances rather than inclination or special aptitude that lead to the choice of a career. It is a very fortunate thing when all combine in the choice. It has to be recognized, however, that there are some persons whom no amount of educational endeavour on the part of the teaching staff of a school or university could convert into accomplished and successful medical practitioners. There is not necessarily any question here

of goodness or badness, but merely of suitability. It is not always the most learned physician who makes the best medical adviser. In general, however, it is only very rarely that anyone entirely unsuitable finds his way through the medical curriculum, and there are, of course, within limits, different kinds of suitability for different branches and crafts within the profession. It remains true that, though character may develop under the influence of educational surroundings even after adolescence, and though this influence may be beneficial, it is the student and not the teacher who must contribute those qualities of character, whether inherent or acquired, which will make or mar the success of his career, whether during his student days or thereafter; and it is a contribution which, to a large extent, he must deliberately and consciously make.

Conclusion

Thus the medical school or faculty offers guidance, but very often this cannot well be given unless it is sought, and though the wisdom of such guidance remains with the teacher its acceptance or otherwise depends upon the student. The school offers instruction, but the student may neglect, or even avoid, it; and offers opportunity of which the student may or may not avail himself. The school offers inspiration, too; but without a basis of character to work upon it loses all its force. Medical education is a co-operative business.

It is a continuous business also. It begins, in a sense, before the student comes to the medical school. While he is there, though it has the definite and limited aim of equipping him to enter upon practice in five or six years, it should also be laying sound foundations on which later post-graduate and continuing education can be built. Afterwards, while in practice, the medical practitioner must go on learning and keep his knowledge up to date. His medical education should not cease as long as he lives, or at least until he no longer practises his profession.

THE PROFESSION OF MEDICINE

INTRODUCTORY

In accordance with long-standing custom we preface the main contents of the annual Educational Number of the *British Medical Journal* with some remarks by way of guidance to those who contemplate entering the profession of medicine. What is said here will follow the lines laid down in previous years; but readers of each subsequent section should bear in mind that not only the methods of medical education but even its purpose are under close scrutiny in various responsible quarters. The medical curriculum is a subject of discussion to-day in nearly every country of the world.

In our Educational Number last year (September 2nd, p. 409) we referred to two important reports on medical education then very recently published—the final report of the American Commission and the interim report of the British Medical Association's Committee. The final report of this committee has now been endorsed by the Council and Representative Body of the Association, and within the year there has also been issued a Bulletin on "Medical Education and the Reform of Medical Studies" under the auspices of the Health Organization of the League of Nations. These three publications—American, British, and international—are probably the most important pronouncements on the subject of medical education that have been issued for many years, and they must together have great influence in determining any changes which may be made either in Europe or in America as a result of the widespread consideration now being given to the matters with which they deal.

The point of view of each of these documents is naturally different from that of the others; but the correspondence of their conclusions and suggestions is remarkable:—indeed, in the case of the reports of the British Medical Association and of the Health Organization of the League of Nations they may, with scarcely any exaggeration, be said to be identical. Broadly, the different aspects from which the three reports consider the subject may be indicated by the questions: What are the needs of the public in relation to the supply and equipment of doctors? (American.) What sort of medical practitioner is it desired to produce? (British.) What is the field of study which must be covered, and how best may this be done. (International.) It must, however, be understood that none of the reports is confined exclusively to answering only one of these questions. All alike insist on the need for a higher general culture and a wider knowledge of scientific (especially biological) facts and principles in entrants upon medical studies; on the importance of medicine as a preventive and social agency; on the co-ordination of medical studies into a unified course instead of their treatment in separated departments; and on the absolute necessity of increasing the opportunity for practical clinical work and the cultivation of a sense of responsibility. In the American report and the League of Nations Bulletin will be found a relatively full account of the actual curriculum of studies in different countries. The impression left by a careful consideration of these is that, for the generality of students, the courses of study prescribed and followed in Great Britain, though in need of revision with a view to meeting more fully the conditions above referred to, are, in most respects, the best to be found anywhere. In his presidential address to the General Medical Council in opening its last summer session, Sir Norman Walker said:

> "Medical education and its bearing on the public weal is to-day the subject of anxious consideration in every civilized country. . . . The boundaries of medicine are ever extending, and there is more and more to be learned. The Council welcomes all the inquiries which are going on as likely to contribute to the solution of a difficult problem."

The General Medical Council has already appointed a small Curriculum Committee to give preliminary consideration to such reports and observations on the subject as may be brought to its notice, and in due course, no doubt, the fruits of this consideration will appear.

FINGER-POSTS

The first object of the Educational Number, 1934, is to inform prospective students and their parents of the steps that must be taken in order to become a registered medical practitioner under the existing order of things. The second is to assist those wishing to know what a medical career has to offer, and others who, having already decided to study medicine, are uncertain about the line of work for which they are best suited. This introductory article is meant to serve as a clue to the great body of information contained elsewhere, but it also gives an opportunity of touching upon some aspects of medical study and practice, and of directing attention to a few points that might not occur to anyone without experience of the medical life.

Intending students will find in the pages that follow an account of the course of training required of them at the

present time, the places where it can be obtained, and the bodies which test the knowledge gained and confer degrees or diplomas entitling successful candidates to become legally qualified medical practitioners. Sections are included also on post-graduate study, on the higher qualifications, both general and special, and on most of the varied spheres of work open to registered medical men and women at home and abroad. The details given are founded on official information, and arranged along the customary lines.

PORTALS OF THE PROFESSION

The *Medical Register* is the official statutory list of legally qualified medical practitioners kept by the General Medical Council. There are many ways in which admission can be obtained to the *Register*. No fewer than twenty-seven bodies—eighteen universities and nine corporations—either separately or jointly, issue registrable qualifications, and the number of teaching institutions is even larger. Nevertheless, the medical courses of the various universities and schools in Great Britain and Ireland run on parallel lines, and the obligatory curriculum is much the same for all students. But the individual teaching and examining bodies have different standards and requirements and bestow different qualifications, and the choice should therefore be made early, so that a definite plan may be followed. The possession of a university degree is generally regarded as an advantage in practice, yet a considerable proportion of medical men in this country find themselves debarred from obtaining it because the Conjoint Examining Boards formed by the union of medical corporations have no power to grant degrees. The decision to study for a university degree in medicine should, if possible, be made by the time a boy or girl is 15. A matriculation examination or its equivalent should be attempted without delay, and the parent should ensure that the special requirements of the medical faculty of the selected university are fulfilled. Few head masters or housemasters seem to be adequately informed about medical requirements under the curriculum as readjusted by the General Medical Council in 1922, and it is doubtful if all secondary schools are fully competent to meet the varying requirements of different authorities. Parents should therefore make inquiries on their own account in order that valuable time may not be wasted during the last year or two at school.

The conditions with which those who wish to enter the profession must comply are regulated by the General Medical Council, which is a statutory body set up under the Medical Acts; a summary of its functions and requirements is given at page 391. Every student, after passing examinations in the subjects of general education and in the preliminary sciences of chemistry and physics, must take a course of training at a recognized medical school, covering a period of at least five years, but usually extended to six years or more.

Examination of candidates as to their fitness to practise medicine, surgery, and obstetrics is left to the licensing bodies, which are of two kinds—the universities, and certain medical corporations in England, Scotland, and Ireland. The requirements of these licensing bodies are summarized elsewhere under separate headings. One of the functions of the General Medical Council, besides that of keeping the *Medical Register* and maintaining discipline within the profession, is to make sure that the tests at each stage do not fall below a certain standard and that the students examined have undergone prescribed courses at approved institutions. Successful candidates eventually receive either degrees, in the case of a university, or diplomas or licences, in the case of a corporation; these qualifications entitle them to claim insertion of their names on the *Medical Register*. Every student, as soon as he obtains his qualification to practise, should at once register; otherwise he cannot hold a public medical appointment, or sign any certificate required from a legally qualified practitioner (such as a death certificate), or recover professional fees in a court of law.

COST OF MEDICAL EDUCATION

For the ordinary student the outlay on his professional education resolves itself into the cost of training at medical school and hospital, and the cost of living during the five or six years of undergraduate study. Besides differences in the charges made for instruction there are differences in examination fees, as well as in the fees for certificates of qualification, and those who seek the higher degrees and diplomas must expect to pay more for the additional courses and tests and certificates. Again, not all students have the knack of imparting what they know to an examiner, and every setback due to failure in the examination room or to illness means added expenses. School and examination fees, together with the cost of board, lodging, clothes, and recreation, form the largest items, and to these must be added the money spent on books, microscope, instruments, and so forth.

Since professional education must continue for five years at least (a period exceeded by the vast majority), and since the cost of living varies much in different parts of the country, while personal expenditure varies still more, it can only be said in a general way that anyone who thinks of entering the profession should be prepared for an outlay of at least £1,500. Something between two-thirds and three-quarters of the whole amount would probably be spent on maintenance, and the rest in fees, etc., for tuition and examination. The fees charged by the different schools and licensing bodies are stated in the paragraphs relating to each on other pages of this issue. When making an estimate of the probable outlay, the many helps available nowadays for the reduction of expense should not be ignored. At nearly all the medical schools more scholarships and money prizes are offered now than in the past; at the Scottish universities bursaries are numerous; and the Carnegie Trust (whose regulations are summarized at page 404) gives pecuniary help to many Scottish students. The main thing to bear in mind when considering costs is that, as compared with other professions, the period of training in medicine is long, and for most students expensive. Further guidance on this matter will be found in a memorandum,[1] drawn up by the late Registrar of the General Medical Council. This pamphlet gives much useful information, including a comparative table of the cost of study and examination at the various institutions.

NUMBERS OF MEDICAL STUDENTS

The following brief survey should be read with the notes and tables printed at page 389 on the numbers of registered students and practitioners. More new students mean more new doctors five or six years later, though, as the chart shows, there is a fairly constant wastage.

At the close of the last century the annual entry of medical students in the United Kingdom had been on the average about 1,800, and then for the next thirteen years it stood at about 1,400. During the war period, though many students left to serve with the Forces, the entries grew steadily larger, so that in 1918 they were 2,253, and in the following year, when demobilization was in active progress, they reached 3,420. In the next five years the numbers rapidly fell, but from 1923 to 1928 they

[1] *Memorandum on the Procedure to be Adopted by those who desire to enter the Profession of Medicine, with Notes on Costs and Prospects.* General Medical Council, 44, Hallam Street, Portland Place, W.1. Price 1s. post free.

remained at a fairly steady level rather below the immediate pre-war average. In 1929 the entries rose again to 1,502, and in 1930 to 1,792. In 1931 they were 1,643, in 1932 they were 1,947, and last year they were 2,287, the highest figure since 1920.

In the past fourteen years the numbers of new practitioners registering each year have greatly exceeded the usual pre-war figure of eleven hundred or so. The large additions to the profession in recent years brought the total number of names on the *Medical Register* up to 56,741 at the end of 1933. This is 8,600 more than the figure for 1923, nearly fifteen thousand more than that for 1913, and nineteen thousand more than that for 1903. The population of the British Isles has not increased at anything like that rate during the same decennial periods, and the ratio of doctors to inhabitants is therefore much higher now than ever before. Some think that the saturation point has been reached. We should say rather that at the moment the medical profession of this country is quite large enough, but not so much overstocked as ill distributed. None the less, it is probably true of this country, as of America, that "doctors are being trained without any consideration of possible consumer requirements and beyond the limit that society can adequately support."

CHOICE OF CAREER

After registration there is usually a period of transition between pupilage and established practice. This time may be put to the greatest advantage by serving as house-physician, house-surgeon, or casualty officer in a hospital, by working as assistant or locumtenent in private practice, or by seeing something of the world as a ship surgeon. As a preliminary to practice of whatever kind, a year spent in junior appointments at a teaching hospital—"clinical experience under supervision"—is a most profitable investment.

If his mind is not made up already, the newly qualified practitioner has now to consider in which branch of the profession he can find a suitable outlet for his abilities. The choice is very wide, though the decision is often dictated rather by opportunity than by a nice balancing of tastes and talents. Among the great variety of paths open are general medical practice in town or country; Government service at home or abroad, including the medical branches of the Armed Forces; public health appointments and other administrative or official posts; institutional work, such as that of the municipal hospital, the mental hospital, the fever hospital, and the sanatorium; academic positions in schools of medicine; and special work in scientific research or in one of the many subdivisions of clinical medicine and surgery. Most of these careers are discussed in some detail in later sections, but a few words may be said here about general practice and the work of a consultant or specialist.

Further information about such matters will be found in the *Handbook for Recently Qualified Medical Practitioners*, published by the British Medical Association.[1] This comprises articles on openings for members of the profession; on practical aspects of medical work; on registration and the privileges of practitioners; on practice under the Insurance Acts; on post-graduation study and special diplomas; and on medical defence societies.

GENERAL PRACTICE

General practice is usually entered in one of three ways. The newcomer may take a house, put up a plate, and wait for work to come to him; he may buy the goodwill of a practice rendered vacant by retirement or death; or he may become a partner in an established firm. The first is considered more risky than the second, and the second than the third. A well-managed partnership of three or more has this advantage over single-handed practice, that it allows each partner leisure for recreation and for keeping up with the progress of medicine. Success in private practice demands a great deal of knowledge beyond that gained at the medical schools, and hence a man is more likely to be accepted as a partner, or to do well on his own account, if he has already some experience as an assistant or deputy. Common-sense hints on how to embark on general practice, and on some of the pitfalls in the path of the beginner, will be found in a little book reviewed in these columns two years ago.[1]

The general practitioner cannot hope to be an expert in every department of medicine, but he should have a more comprehensive outlook than the man whose life is devoted to perfecting himself in the technique and minutiae of one subject. The opportunities he has of seeing his patients for minor ailments as well as for serious illnesses; his acquaintance with their family history, habits of life, social circumstances, and many other personal details learnt only after long and confidential intercourse, give the "G.P." just that knowledge which enables him to treat the patient and not merely the disease. All the more important, therefore, that the education of the general practitioner should be planned and carried out on right lines. The curriculum is already very long and it cannot be further lengthened. Courses of study and tests of competence should be rearranged so that the future practitioner's time is not spent in acquiring knowledge of small use in after life. The aim of his teacher should be to give him a solid foundation upon which he himself can build through experience and study after qualification.

Since three-quarters at least of those who pass out of the medical schools become "family doctors" sooner or later, it seems clear (though it is not everywhere admitted, even to-day) that the main purpose of the curriculum ought to be the training of the student for general practice—that is, the production of a "safe and competent general practitioner." This implies a sound knowledge of the needs of general practice—knowledge possessed only by those who have had personal experience of such practice.

"The general practitioner requires a specialized training no less than members of other branches of medicine, but while the greater part of the training for those branches is conducted by specialists in their own subjects, the formulation of our undergraduate educational policy, the training, and the examination are almost entirely in the hands of those who know little or nothing about general practice. I contend that, in order to achieve the real purpose of undergraduate training, the services of general practitioners of first-class ability, of considerable experience, and possessed of high professional and ethical standards should be enlisted in every medical school. In some places a beginning has already been made. Short courses of lectures to senior students on national health insurance practice, and here in Manchester the appointment of a well-known practitioner to the post of lecturer on medical ethics and conditions of medical practice, are welcome signs of at least a partial recognition of the claim of general practitioners to take their part in the task of undergraduate training."[2]

In its Proposals for a General Medical Service for the Nation[3] the British Medical Association states as an axiom that "the medical service of the community must be based

[1] *Handbook for Recently Qualified Medical Practitioners.* British Medical Association, Tavistock Square, W.C.1. (3s. 6d. net: post free 3s. 9d.)

[1] *A Guide to General Practice.* By A. H. Douthwaite. London: H. K. Lewis and Co., Ltd. 1932. (4s. 6d. net.)

[2] "Medical Education as a General Practitioner Sees It." Arnold Gregory. *British Medical Journal*, February 24th, 1934, p. 75.

[3] The memorandum is issued as a pamphlet by the British Medical Association. (6d. post free.)

on the provision for every individual of a general practitioner or family doctor " ; and the whole series of proposals rests on this as a fundamental principle. In regard to the prevention of disease, on which the Association lays great stress in its memorandum, the general practitioner has an increasingly important part to play. As knowledge accumulates he should come more and more to study early disorders of function and the preservation of bodily and mental health in varying circumstances. While this is all to the good, it cannot be denied that encroachments on private medical practice are perpetually being made under the auspices of the State or of the municipality or of voluntary bodies, and that official requirements and administrative checks imposed by public authorities tend to increase.

The national system of compulsory health insurance, now more than twenty-one years old, has had a profound influence on general medical practice in this country. The Insurance Acts provide domiciliary medical attendance for some seventeen million persons, and more than 18,000 members of our profession undertake the medical care of this vast section of the community. Thus the bulk of the general practitioners of the country now give, in large or small measure, attendance and treatment under a system embracing almost the whole working population. These practitioners, by placing their names on the panel (or medical list), signify their assent to the terms of service set out in the Medical Benefit Regulations and other relevant provisions. Their interests are watched over by the Insurance Acts Committee of the British Medical Association, which is the executive body of the Annual Conference of Representatives of Local Medical and Panel Committees.

CONSULTANT PRACTICE

The term " consulting practice " comprises in ordinary usage the work of the general physician, that of the general surgical consultant or operating surgeon, and that of the gynaecologist and obstetrician. These are the three large divisions of consulting practice, as distinct from general practice, which, though they imply some restriction, yet call for a wide range of activity and outlook, in contrast with the smaller ambit of a " specialty " in the narrow sense. Of these main divisions the third is obviously the most limited, but on several grounds it can claim to rank as something more comprehensive than the other specialties. No sharp line can, however, be drawn between consulting practice and specialist practice. Most general consultants, whether medical or surgical, are specialists in some branch of their practice, and most specialists are consultants in the sense that their work largely comes to them through the recommendation of general practitioners, with whom they act (or should act) in a consultative capacity.

Success as a consulting physician or surgeon or specialist is hard to achieve, except by the aid of appointments to hospitals, particularly those with medical schools. These posts are much sought after, and the time of waiting for a vacancy may be long. It follows, then, that the would-be consultant, since he can scarcely hope at first to keep himself on his professional earnings, must either have private means or be prepared, by teaching or in other ways, to make ends meet. Competition in this branch of practice is very keen. Expenses are heavy, and the young consultant or specialist may have to go through a long period of training and waiting before he makes an income ; but on the other hand success, when it comes, is liberally rewarded. The advantage to a consultant of some first-hand knowledge of general practice is not widely enough recognized. " I wonder," said the great American surgeon, Dr. W. J. Mayo, the other day, " whether the present tendency to enter the specialties directly from the medical school without intervening conversion of knowledge into wisdom is wise."

In the larger industrial towns of the North of England there are many " general practitioner specialists " who combine ordinary panel practice with much surgical or other special work in well-equipped local hospitals which admit patients in different categories according to their means. Though the fees are small compared with those earned by operating surgeons and specialists in London, the work is by no means unremunerative.

Additional degrees and diplomas are important factors in securing election to the visiting staff of a large hospital, and a few remarks about them may be made here. Beyond the qualifications which admit to the *Medical Register,* most of the licensing bodies bestow higher titles after further tests. A considerable number of those who have graduated M.B. at a university, including many general practitioners, proceed later to the M.D. When applying for the post of physician to a hospital it is always useful, and may be obligatory, to hold also the Membership of one of the three Royal Colleges of Physicians, according to the part of the British Isles in which the hospital is situated. So, too, the Fellowship of one of the three Royal Colleges of Surgeons should be obtained by those seeking surgical appointments, and the degree of Master of Surgery is an added distinction. There are also diplomas in a growing number of special branches of work—such as public health, tropical medicine, ophthalmology, laryngology, radiology, tuberculosis, psychological medicine, and midwifery—which are superfluous for most practitioners, but may be useful or even indispensable for those who intend to devote themselves to one or other of these subjects.

FINANCIAL AND SOCIAL ASPECTS

" The choice of a lifework is determined largely by the conditions, opportunities, and social recognition provided by a given vocation." In medicine the pecuniary disadvantages are the long and costly training, the time of waiting after qualification before the practitioner can count upon an adequate income, and the heavy working expenses in proportion to gross earnings. On the other hand, medical practice holds out the prospect of a fairly certain income, with unrivalled opportunities for exercise of the intellect in the service of others. But those who think of adopting it as a career ought to understand that medicine is a path to fortune only for the few. Yet if from the financial point of view it offers to most men little more than a means of livelihood always at command, in its social and cultural aspects the outlook is far brighter. A doctor's life need yield to none in the matter of sustained and varied interest. His lot is unlike that of many whose business gives little scope to the higher faculties, for he lives in, and by, the exercise of intellectual powers. The steady improvement in the education of the practitioner has added much to his influence with the public, and has been a large factor in raising his social status during the seventy-six years that have passed since the General Medical Council was constituted under the first Medical Act. Medicine gives to those who follow it an honourable position. The well-educated doctor stands high among his neighbours, and is the friend and confidant of his patients. Many go further, and take part in the public life of their district ; and this is as it should be, because the doctor's training and outlook are such as fit a man for leadership.

PROFESSIONAL ORGANIZATION

Individuals and isolated groups of doctors are always at a disadvantage when they try to defend their interests against organized bodies, whether these are Government departments, local authorities, or commercial companies.

In his daily work the doctor is well able to deal with the individual patient and the patient's friends, but he cannot stand up single-handed to outside organizations. Medical men and women must therefore band themselves together, and the first step after qualification should be to become an active member of the British Medical Association. Besides having behind him the machinery and the influence of a world-wide professional body, a young practitioner will find in the meetings of his local Division or Branch, and in the Annual Meetings of the Association, many opportunities for keeping abreast of new work and for friendly intercourse with colleagues. Another thing that no new graduate should fail to do is to join one of the societies which for a small yearly sum undertake individual legal defence of their members. The need for protection may arise out of the first case attended in hospital or in private practice.

The British Medical Association was founded in 1832 to promote the medical sciences and maintain the honour and interests of the profession; a brief note on its constitution and activities will be found at page 454. This great Association, with Branches throughout the British Empire and a membership of 35,000, is the only body that can act for the profession as a whole and speak in its name. The record of a hundred years' work shows that vocational organization, wisely directed, can combine service for its members with service for the public. Every medical man and woman should try to take a share in some of the movements, scientific or social or political, with which the B.M.A. has identified itself.

NUMBERS OF THE MEDICAL PROFESSION

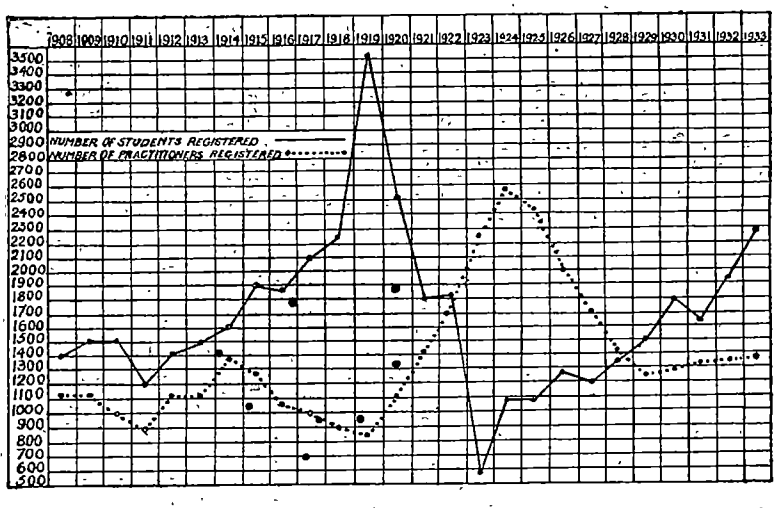
A Review of Fifty Years

In order to present a general view of the numerical strength of the medical profession during the past half-century we have extracted from the records and set down below in parallel columns the total number of names in the *Medical Register* on December 31st of each year, and the numbers added annually by registration between 1884 and 1933:

Numerical State of the "Medical Register"

Year	Names added in Year	Total No. on Dec. 31	Year	Names added in Year	Total No. on Dec. 31
1884	1,388	25,321	1909	1,143	39,818
1885	1,377	25,998	1910	1,062	40,483
1886	1,431	26,452	1911	1,042	40,913
1887	1,531	27,246	1912	1,157	41,439
1888	1,184	27,939	1913	1,168	41,940
1889	1,305	28,348	1914	1,433	42,378
1890	1,266	29,163	1915	1,526	43,225
1891	1,345	29,555	1916	1,202	43,481
1892	1,513	30,590	1917	1,134	43,819
1893	1,579	31,644	1918	1,077	43,926
1894	1,426	32,637	1919	1,322	44,510
1895	1,446	33,601	1920	1,457	44,761
1896	1,385	34,478	1921	1,760	45,408
1897	1,230	34,642	1922	1,983	46,476
1898	1,210	35,057	1923	2,482	48,140
1899	1,351	35,836	1924	2,796	50,035
1900	1,345	36,355	1925	2,570	51,738
1901	1,318	36,912	1926	2,120	52,614
1902	1,275	37,232	1927	1,941	53,769
1903	1,233	37,878	1928	1,656	54,336
1904	1,168	38,492	1929	1,410	54,870
1905	1,240	39,060	1930	1,490	55,291
1906	1,197	39,529	1931	1,522	55,604
1907	1,221	39,827	1932	1,545	56,096
1908	1,137	40,257	1933	1,543	56,741

Numbers of Medical Students and Practitioners Registering 1908 to 1933



The varying proportion of registered medical practitioners to population during the period under review is shown in the following table. This sets out the total population of the British Isles at each decennial census since 1881, and the number of names on the *Register* in the same year.

Proportion of Practitioners to Population

Year	Registered Practitioners	Population, British Isles
1881	23,275	35,241,482
1891	29,555	38,104,975
1901	36,912	41,976,827
1911	40,913	45,370,530
1921	45,408	47,146,506
1931	55,604	48,989,485

These figures show a steady increase in the ratio of doctors to population, which was accelerated during the years immediately following the war. Making allowance for the large number of registered practitioners living abroad and for those no longer in practice, the proportion of doctors to population is a good deal more than one to every thousand. In the United States of America it is estimated that there is one medical practitioner to every 830 people. Japan, with a population of 84,000,000, has some 50,000 doctors. According to statistics published last year by the International Labour Office the country with the most medical practitioners is England, with 1 doctor to every 822 inhabitants, then come Norway, Italy, and Switzerland, with 1 doctor to every 1,067, 1,218, and 1,231 inhabitants respectively. In Hungary, Esthonia, Germany, Denmark, France, Holland, and Luxemburg the proportion ranges from 1 to 1,290 to 1 to 1,556, Belgium and Sweden have 1 doctor to 2,344 and 2,744 respectively, while in Bulgaria, Poland, and Yugoslavia there is 1 doctor to every 3,059, 3,332, and 3,568 inhabitants respectively.

Registration of Students and Practitioners

The relation between the numbers of new students and those of newly qualified practitioners during recent years is shown in the chart on this page, compiled from returns published by the General Medical Council.

The figures for the registration of practitioners year by year apply only to those whose names were entered on the British list, entries in the colonial and foreign lists of the *Medical Register* being excluded; hence the slight discrepancy between the totals indicated in this chart and those given in our tables printed above. Some further remarks on the numbers of medical students in recent years will be found in our introductory article on the profession of medicine.

ON CHOOSING A MEDICAL SCHOOL

A STUDENT'S VIEW OF LONDON TEACHING HOSPITALS

A correspondent, knowing the interest now taken in all aspects of medical education, has lent us the MS. notebook in which a young friend recorded and analysed his impressions after visits of inquiry, made two or three years ago, to a number of London teaching hospitals and Continental clinics. The writer of the notes had, we learn, just finished his undergraduate career at one of the ancient English universities, and the main purpose of his tour was to help him in deciding where to enter for the clinical years of the curriculum.

After visiting nine of the twelve teaching hospitals of the metropolis he recorded his observations on an orderly plan. First, he drew up a schedule of the essential features of a teaching hospital in respect of what it should, in his opinion, offer the student who means business and aims high. He next considered each of the nine hospitals, individually and in some detail, from this point of view. He then formulated his conclusions in general terms, following this with brief notes on the special points of the hospitals under review. Lastly, he made a summary and comparison of the various institutions, awarding points to each on a uniform plan, and added up the total scores on the final sheet. Which hospital he chose, and why, we must not reveal.

The notebook as a whole brings before our eyes the picture of a young man of parts, possessing a methodical mind, acute observation, critical and analytical gifts above the ordinary, and a shrewd and unsentimental eye for realities. His impressions and reflections were written purely for the purpose of helping him to make a personal choice, and the remarks on individual hospitals are much too frank for publication. With the author's consent, however, we reproduce below his "general conclusions" and his "essential features," in the hope that they may perhaps serve as food for thought, both to some of the younger generation whose professional training lies before them, and to those of riper years who are still pondering over the problems of the curriculum. Beyond one or two trifling corrections, we have made no change in text or schedule.

Factors Influencing a Choice

The ideally inclined, making a tour of the London teaching hospitals, is almost certain to be disappointed. Having associated hospitals with orderliness and spotless efficiency, and entering a building which is grimy, irregular, and unlovely on the outside, he wanders about in dingy corridors and peers into vast, hall-like chambers where hordes of sickly individuals are herded in archaic iron beds; and is appalled. "Is this Medicine?" he asks himself; and as he is led down miles of these dreadful passages and invited to gaze upon similar collections of recumbent beings, he becomes divided in his mind. Either these hospitals are hopelessly inefficient and patients recover by miracle, or medicine works in peculiar ways. Neither of which is correct.

That hospitals may be inefficient is certainly possible; also it is true that some features of medicine are definitely odd, but the point is that *medicine*, if one can speak of it as an entity, is mostly invisible in its process. It exists as an unseen process of repair in human bodies, as hypotheses or intentions in the brains of medical men, as a memory or instructions in the cortex of assistants, pharmacists, and nurses, and at only a few rare points and instances does its application become visible—as when a physician is seen by a bed entrapping heart sounds in his stethoscope, a surgeon excising some offending organ, a patient about to swallow his physic. The rest is occult; enacted behind the scenes.

And if one can learn little of the way in which medicine is done by seeing over a hospital, how is one to judge of the hospital itself? Furthermore, if a place is chaotically ramshackle and desperately disorderly, one must always remember that few of the great discoveries of science have been made in light, airy, shining labs. Is a patient, also, any less likely to get better in an iron bedstead than in a chromium-plated one? Even more relevant: would one learn more from a patient who died in a hospital which looked like an industrial chemical laboratory than from one who spent his last hours in a place like a parish hall? Discrimination becomes more perplexing.

Perhaps one can gain a better perspective of the matter if one regards a hospital as an elaborate and intricate instrument for treating the sick. Regard the staff of the hospital collectively as the craftsman who manipulates the implement. If he is a conscientious craftsman he will take care to have the most effective accessories to his apparatus, and replace them when they become obsolete. Thus there is something fundamentally more progressive about a place which is kept up to date, designed to require a minimum of effort in its working, and fitted with the latest appliances, than about one in which these amenities are lacking. For a good workman does not tolerate bad tools.

If this much can be deduced from a single hospital, then how are several to be compared? Granted that one is to prefer a well-equipped building to a building worse off, one must not let the mere fact of obvious efficiency blind one to some other features of the place. The essential consideration is that one wants to learn medicine, and it may be (to revert to the simile) that while not paying as much attention to the appearance of his instrument as his colleagues, the craftsman is a better instructor of his apprentices.

Here occurs another difficulty. Unless one has actually sampled the methods of teaching at a hospital and experienced the results, one is not in a position personally to criticize; one can only judge from what is told by others (and opinions differ widely), or rely on one's own intuition (whose accuracy is equally questionable). There are certain features upon which a decision can be reached by use of mere common sense. If one is to learn, there must be material to learn from. Thus one would not be well advised in going to a hospital which had an enormous number of students in it but very few beds. And there must be teachers: it is reasonable to suppose that a man can more effectively teach a few students than a huge band of them. So that one can infer something as to the opportunities for learning at a hospital by the size of its firms.

Then it is important for many people that they should secure a house appointment upon qualification. If one selects a hospital which has relatively few such appointments but a large number of students, then manifestly is lessened one's chance of getting such a job.

It may influence a man if he is scientifically inclined in choosing between a hospital with a grand tradition and one which has a reputation for achievements in research. It can readily be realized, however, that a hospital which excels in one respect is apt to fall short in another, and only by balancing the pros and cons can one arrive at a satisfactory conclusion. And it is plain to anybody who has been over and investigated the facts concerning a number of teaching hospitals that there is very little indeed to choose between them. Some of them look execrable, a few nearly superb; but none of them has been condemned by a Royal Commission; patients still patronize them and swear by them; students patronize them and likewise swear by them and get through the same exams. The principle of medicine behind them all is identical; it is a matter of distinguishing between members of the same species.

If one had no prejudices, was insensitive to environment, and acted on "hit or miss" principles, then one might make one's selection with the aid of a pin. But if one preferred to assert one's free will, did not feel obliged to follow the herd, or was not bound by familial usage, then one would have to discriminate between subtle points and take into consideration factors which

might be deemed trivial were they not so hard of analysis. In this way features such as the site of the hospital, type of one's fellow students, become important. If one does not want to share the medical school with amateur chemists, physicists, biologists, and so on, then one will choose a hospital which covers only the clinical part of the curriculum.

Essential Features of a Teaching Hospital

(*a*) Size:
- Number of beds.
- Number of students.
- Dimensions of firms.
  - (Proportions of beds, honoraries, and students should be such that firms are not unwieldy or short of material.)

(*b*) Modernity:
- Buildings.
- Apparatus.

(*c*) General Outlook of Place:
- Scientific or traditional?

(*d*) Staff:
- Number of honoraries and others.
- Status.

(*e*) House Appointments:
- Opportunity of obtaining them.
- Standing relative to those of other hospitals.

(*f*) Research:
- Extent to which furthered.
- Particular line.
- Merit.
- Funds.

(*g*) Status of Hospital as a whole.

(*h*) Situation of Hospital:
- Central or otherwise.
- Availability of neighbouring lodgings.
- Hostel.

(*i*) Scholarships, etc.

(*j*) Extent of Studies:
- Whether entire medical syllabus covered or only the clinical portion.

(*k*) Arrangement of Courses.

THE CURRICULUM TO-DAY

In 1922 the General Medical Council prescribed a readjustment of the medical curriculum, to come into force in the following year. The scheme adopted was in effect a compromise between several "schools of thought" which had been debating the matter for fifteen years or more. In this readjustment, among other things, increased emphasis was placed upon sufficient opportunity being afforded for the study, both theoretical and clinical, of subjects such as ophthalmology, venereal disease, orthopaedics, ante-natal conditions, and infant welfare, and upon the importance of preventive aspects of medicine. We summarize below the leading features of the revised scheme of professional study and examination which has applied since the beginning of 1923. The first qualifying examinations based upon this readjusted curriculum were held in 1928.

The minimum age for registration as a medical student is now 17 years. There has been no formal lengthening of the medical curriculum under the revised scheme, but in practice it has been added to by transferring to preliminary study and examination the subjects of elementary physics and chemistry in their purely scientific aspects. Thus, in addition to passing a preliminary examination in general education, an examination (written, oral, and practical) in the elements of physics and chemistry is required by the General Medical Council before the admission of a name to the *Students' Register*. In the applications of these two subjects to the professional courses—as in biophysics, biochemistry, and pharmacological chemistry—appropriate instruction is supposed to continue throughout the curriculum, and to be tested by examination. If he has had no facilities at school or otherwise for obtaining what is necessary for the preliminary or pre-registration examination in chemistry and physics, then he can come for it to the university or medical school, but study for this will not count as part of the curriculum. The examination in elementary biology is not "pre-curriculum," but the instruction may be so, and a licensing body can allow students who so desire to sit for the examination immediately after matriculation. Here again, however, it is the wish of the Council that the applications of biology to medicine, surgery, and midwifery shall continue to receive adequate attention throughout the courses.

The General Medical Council

The General Medical Council was established by the Medical Act, 1858, in order "that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners." Eighteen members of the Council are appointed by the Universities in the United Kingdom having medical faculties; nine by the Medical Corporations, such as the Royal Colleges of Physicians and Surgeons; five by His Majesty in Council; and seven members are directly elected by members of the profession as a whole—a total of thirty-nine. To these are added three dentists who are members of the Dental Board, and are appointed for dental business. Although the eighteen members appointed by the Universities and the five members appointed by His Majesty in Council may all be laymen, only two laymen have so far been appointed; the first of these was appointed by the Privy Council in 1926, and, on his resignation in 1931, another was appointed in his place. Both were members of His Majesty's Privy Council.

The Council's offices are at 44, Hallam Street, Portland Place, London, W.1, and there are Branch Offices at 12, Queen Street, Edinburgh 2, and 35, Dawson Street, Dublin.

The Council exists for the protection of the public and not of the profession. Its principal functions are three. First, to keep the *Medical Register*; second, to see that the name of no person is entered thereon as qualified unless he has had an adequate professional education, and to remove therefrom the names of qualified persons who are no longer entitled to public confidence; and third, to provide for the publication of the *British Pharmacopoeia*. It is the appearance of a name upon the *Medical Register*, and not the possession of a degree or diploma, that constitutes a person a "duly qualified" or "legally qualified" practitioner of medicine.

The Council has no power to make rules in regard to the medical curriculum or examinations, but it can pass resolutions and make recommendations relating thereto, and, if any of these were ignored by the licensing bodies, it would be open to the Council to make representations to the Privy Council, which if it thought fit, might order that the qualifications obtained from such bodies should not be registrable.

The name of any medical practitioner who has been convicted of felony or misdemeanour, or who is judged, after due inquiry before the Council itself to have been guilty of "infamous conduct in any professional respect," may be erased from the *Medical Register*.

The Medical Acts prohibit attempts being made to impose restriction as to any theory of medicine or surgery, and, once a practitioner has been trained and tested in the knowledge essential for public safety, he may adopt any "theory" of medicine or surgery in which he honestly believes. The Medical Acts do not prohibit the practice of medicine by unregistered persons, but if they "wilfully

and falsely" assume any title implying registration they are liable to prosecution. In this respect the Medical Acts differ from the Midwives and the Dentists Acts, which entirely preclude the practice of midwifery or dentistry by unregistered persons. Unregistered medical practitioners, however, are under certain disabilities, for they cannot recover charges for medical or surgical attendance, etc., in a court of law; they cannot hold an appointment as medical officer of health, in public (including mental) hospitals, or as a medical officer in the Military or Naval Services, or in ships; they cannot give any valid certificate which is required by any Act from a medical practitioner—for example, a certificate of death; and they cannot engage in insurance practice, obtain dangerous drugs, or attend cases of venereal disease.

An account of the recommendations which the Council has drawn up in respect of the education of medical students here follows.

Registration of Medical Students

The Council recommends that every intending student of medicine should be registered as such at one of its three offices, whose addresses are given on page 393.

Candidates must produce evidence (*a*) that they have attained the age of 17 years; (*b*) that they have passed an examination in general education which is accepted for matriculation or entrance to the Faculties of Arts or Pure Science in a university in the United Kingdom; and that in addition thereto they have passed an examination in elementary chemistry and elementary physics conducted or recognized by one of the licensing bodies.

Application for registration should be addressed to the Registrar for the Division of the United Kingdom in which the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained from any of the offices of the General Medical Council itself, or from one of the various licensing bodies or medical schools.

The regulations with regard to registration apply alike to medical and to dental students, with the exception that for dental students pupilage with a registered dental practitioner may be regarded as the beginning of professional study, and that applications for registration should be addressed to the London office of the Council only.

Professional Education

The rule is that it is only from the date which appears against his name in the *Students' Register* that the medical student's career officially begins; thereafter five academic years at least must pass before he can present himself for the final examination for any diploma entitling its lawful possessor to registration as a qualified medical practitioner under the Medical Acts. But to meet the circumstances brought about by the dates at which sessions of the medical schools begin and end, the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration. In any case, the period of five years must be one of bona-fide study; and in every course the following subjects should be included:

(i) Elements of General Biology, including an introduction to Embryology. This course, if the licensing bodies permit, may be taken before registration, and the examination may be passed immediately after registration.

(ii) Chemistry, Physics, and Biology in their application to Medicine.

(iii) Human Anatomy and Physiology, including Histology, Elements of Embryology, Biochemistry, and Biophysics.

(iv) Elementary Bacteriology, before regular clinical appointments.

(v) Pathology, general, special, and clinical, and Morbid Anatomy.

(vi) Pharmacology and Materia Medica, to be taken concurrently with clinical instruction.

(vii) Forensic Medicine, Hygiene, and Public Health.

(viii) Medicine, including Applied Anatomy and Physiology, Clinical Pathology and Therapeutics, Children's Diseases, Acute Infectious Diseases, Tuberculosis, Mental Diseases, Skin Diseases, and Vaccination.

(ix) Surgery, including Applied Anatomy and Physiology and Clinical Pathology, Anaesthetics, Diseases of the Eye, Ear, Throat, and Nose, Radiology, Venereal Diseases, and Orthopaedics.

(x) Midwifery and Diseases of Women, including ante-natal conditions and infant hygiene.

The Council recommends that during the last three of the five academic years clinical subjects shall be studied.

The first two years must be passed at a university, or at a school of medicine recognized by any of the licensing bodies, and the remainder must be devoted to clinical work at any public hospital or dispensary at home or abroad which is recognized by a licensing body.

Special Considerations

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in outline, but before leaving this part of the subject the steps which the aspirant should take may be rehearsed in their due order:

(1) Pass an examination in arts;

(2) Pass an examination conducted or recognized by a licensing body in elementary physics and elementary chemistry;

(3) Having attained the age of 17, enter himself at a university or at a medical school recognized by one of the licensing bodies;

(4) Obtain registration as a medical student;

(5) Study for a minimum of five years certain prescribed subjects;

(6) Meanwhile pass sundry intermediate examinations; and at the end of the fifth year pass a "qualifying examination" which will entitle him to receive from a licensing body a qualification enabling him to obtain registration in the *Medical Register*, whereby he receives legal authority to practise.

The Minimum Period.—It must be remembered that the period of five years is a minimum; more is often required, even by the man of good abilities and reasonable industry, and some of the universities prescribe a longer period. Besides these qualities a student, to obtain a registrable qualification in the minimum period of five years, or fifty-seven months, must have a considerable amount of good luck; in other words, he must keep in good health through every term, and never fail at a single examination. Thus, for instance, before presenting himself for any examination he must be "signed up" for the subjects covered by that examination; this means that his teachers have to certify that he has diligently attended the required number of lectures or classes in the subjects in question. If, however, the student happens to be ill during the term when such lectures or classes are taking place, he may miss enough of them to make it impossible for him to be signed up. Then again, should he fail to satisfy the examiners at some examination, he cannot present himself for re-examination for at least three months. This generally entails further consequences, because, apart from the student's success at the next stage in his career being imperilled by the need for restudying the subjects in which he has failed, the Examining Boards usually insist upon a definite interval elapsing between one examination and the next. Further, many Boards have refused to recognize lectures and classes which have been attended before the student has passed the requisite examination in earlier subjects, and the Council now recommends that the professional examinations in anatomy and physiology be passed before the minimum period of three years' subsequent study be entered on; in other words, no clinical study should count as such until these examinations have been successfully completed. Failure at an examination may thus not only mean deferment of the date of examinations, but deferment of the beginning of the student's study of certain subjects. It is thus exceedingly easy for a student

to fail to qualify in five years, and, as a fact, the majority of students take longer.

In speaking of the minimum period, it is to be remembered also that that time is only sufficient to gain a registrable qualification, such as a Bachelorship of Medicine or Surgery or the diplomas of the Royal Colleges. Those who wish to take a higher qualification—for instance, the F.R.C.S.Eng.—must prolong their work for another year or more. So, too, in some cases, must those who desire to convert their Bachelorship into a Doctorate. This may entail further formal examination, but at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age and has practised for a certain number of years. However, a student's career proper may be considered, perhaps, to have ended when he obtains his first registrable qualification, for while preparing himself for any further tests he can, and usually does, hold some junior appointment which more or less covers his expenses.

Memorandum on Students' Registration

The following memorandum has been drawn up on behalf of the General Medical Council as to the procedure for those who desire to be registered as medical or dental students.

The requirements for the registration of medical and dental students are the same, and every intending student should, in his own interest, register as soon as he begins his professional curriculum.

A recognized examination in general education must first be passed. If the student intends to obtain a university degree, he should apply to the university he selects for information as to its matriculation requirements in arts or pure science, or as to any examinations which may be accepted in fulfilment thereof. If the student intends to obtain a qualification from one of the licensing corporations (these are the Conjoint Boards in England, Scotland, and Ireland, the Society of Apothecaries of London, and the Apothecaries' Hall of Dublin), any of the examinations indicated below will be accepted. The subjects required are: (1) English, (2) Mathematics (elementary), (3) a language other than English, and (4) a fourth subject as required by the regulations of the particular examination, to be chosen from the following—namely, History, Geography, Botany, Physical Science, Natural Science, Latin, Greek, Hebrew, French, German, or other language accepted by a university for matriculation. School certificates (other than "Higher") must show "Credits" in each of the prescribed subjects. When school certificates with four credits are presented, or certificates from the Educational Institute of Scotland and College of Preceptors, the passes in the four subjects must be shown to have been obtained at not more than two sittings.

The requirements of the preliminary examination in general education being satisfied, it is then necessary for the student to pass a further or pre-registration examination (theoretical and practical) in elementary chemistry and elementary physics, which is conducted or recognized by one of the licensing bodies—that is, a university or licensing corporation. These subjects must be passed *in addition* to those included in the preliminary examination—for example, chemistry taken as one of the four required subjects in the preliminary examination cannot also count as one of the subjects of the pre-registration examination. These subjects may be studied at a university or medical school, or at a secondary school or other institution recognized by the body whose pre-registration examination it is intended to take. The student should, in every case, write beforehand to the body whose qualification he desires to obtain (a list will be found below) for information in regard to its requirements for this examination, and, although it is not necessary to pass in biology before registration as a student, application should be made at the same time to the body selected to ascertain their requirements in regard to this subject.

These two examinations (in general education and in physics and chemistry) having been passed, and the student having attained the age of 17 years, he should apply to one of the universities or one of the medical schools for admission to its course of medical study. When medical study has been begun, he should apply to the Dean of the School, or to the Registrar of one of the branches of the General Medical Council, for a form of application for registration as a student, and should have it completed and sent in to one of the Branch Councils as soon as possible. There is no fee for this registration. The medical curriculum will extend for at least five years, and the dental curriculum for at least four years, from the date of registration as a student.

A dental student may begin his curriculum, if he so desires, as a pupil in dental mechanics of a registered dental practitioner; but study at a dental school is to be preferred. If, however, he is apprenticed to a dental practitioner, he will have to devote twice as much time to instruction in dental mechanics as he would if he had taken this subject in a school. This will have the effect of lengthening the curriculum. In any case a student can only obtain a concession of twelve months out of the four years' curriculum in respect of such apprenticeship.

The addresses of the Branch Registrars are:

General Medical Council, 44, Hallam Street, Portland Place, London, W.1.
Scottish Branch Council, 12, Queen Street, Edinburgh, 2.
Irish Branch Council, 35, Dawson Street, Dublin.

Examining Bodies in Preliminary Education

The following is a list of the officials of the examining bodies in preliminary education, with the names of the examinations in parentheses.

Secretary, Queen's University of Belfast. (Matriculation.) Assistant Secretary, Ministry of Education. (Senior Certificate.)
Registrar, The University, Bristol. (Matriculation, School Certificate, or Higher School Certificate.)
Registrary, The University, Cambridge. (Previous.)
Secretary, Cambridge Local Examinations, Syndicate Buildings, Cambridge. (School or Higher School Certificate.)
Medical Registrar, University of Dublin (Trinity College), Dublin. (Entrance examination to the School of Physic.)
Registrar, University of Durham College of Medicine, Newcastle-on-Tyne. (Matriculation, School or Higher School Certificate.)
Registrar, Irish Conjoint Board, Royal College of Surgeons, Dublin. (Preliminary Examination.)
Registrar, National University of Ireland, Dublin. (Matriculation.)
The Assistant Commissioner of the Department of Education, 1, Hume Street, Dublin. (Senior Grade Examination or Leaving Certificate.)
Assistant Secretary, Ministry of Education, Belfast. (Senior Grade or Leaving Certificate.)
Secretary of the Examinations Council, The University of London, South Kensington, London, S.W.7. (Matriculation, General, or Higher School Certificate.)
Secretary, Northern Universities Joint Matriculation Board, 315, Oxford Road, Manchester. (Matriculation, School, or Higher School Certificate.)
Registrar, University Registry, Oxford. (Responsions.)
Secretary, Oxford and Cambridge Schools Examination Board, Schools Examination Office, Balliol College, Oxford. (School or Higher School Certificate.)
Secretary, Oxford Local Examinations, University Press, Oxford. (School or Higher School Certificate.)
Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1. (Senior Certificate at Credit Standard.)
Secretary, Educational Institute of Scotland, 47, Moray Place, Edinburgh. (Preliminary Medical Certificate.)
Secretary, Scottish Education Department, 14, Queen Street, Edinburgh. (Leaving Certificate.)
Secretary, Scottish Universities Entrance Board, 81, North Street, St. Andrews. (Scottish Universities Preliminary Examination.)
Registrar, University of Wales, Cathays Park, Cardiff. (Matriculation.)
Clerk, Central Welsh Board, Cardiff. (School or Higher School Certificate.)

[*Note.*—Certificates of the College of Preceptors and School Certificates (other than "Higher") must show "Credits" in each of the prescribed subjects.]

Licensing Bodies

The following is a list of the officials of licensing bodies and their addresses:

ABERDEEN, The Secretary of the Medical Faculty, The University.
BELFAST, The Secretary, Queen's University.
BIRMINGHAM, The Registrar, The University.
BRISTOL, The Registrar, The University.
CAMBRIDGE, The Registrary, The University.
DUBLIN, The Medical Registrar, The University, Trinity College.
The Registrar, National University of Ireland.
DURHAM, The Registrar, University of Durham College of Medicine, Newcastle-upon-Tyne.
EDINBURGH, The Dean of the Faculty of Medicine, The University.
GLASGOW, The Registrar, The University, W.2.
LEEDS, The Registrar, The University.
LIVERPOOL, The Registrar, The University.
LONDON, The Academic Registrar, The University, South Kensington, S.W.7.
MANCHESTER, The Registrar, Victoria University.
OXFORD, The Dean, Department of Medicine, The University.
ST. ANDREWS, The Secretary, The University.
SHEFFIELD, The Registrar, The University.
WALES, The Registrar, The University Registry, Cathays Park, Cardiff.

Licensing Corporations

ENGLISH CONJOINT BOARD. The Secretary, 8, Queen Square, Bloomsbury, W.C.1.

SCOTTISH CONJOINT BOARD, The Secretary, 49, George Square, Edinburgh.
IRISH CONJOINT BOARD, The Secretary, Royal College of Surgeons in Ireland, Dublin.
APOTHECARIES' SOCIETY OF LONDON, The Secretary of the Court of Examiners, Blackfriars, London, E.C.4.
APOTHECARIES' HALL OF IRELAND, The Registrar, 95, Merrion Square, Dublin.

Medical Schools

The following is a list of medical schools (other than universities) and their officials.

ABERYSTWYTH, The Registrar, University College. (University of Wales. First year only.).
BANGOR, The Registrar, University College. (University of Wales. First year only.)
CARDIFF, The Dean of the Medical School, Welsh National School of Medicine.
The Registrar, University College of South Wales and Monmouthshire.
CORK, The Registrar, University College.
DURHAM, The Registrar, College of Medicine, Newcastle-upon-Tyne.
DUBLIN, The Medical Registrar, University of Dublin, Trinity College.
The Registrar, University College.
The Secretary, School of Medicine, Royal College of Surgeons.
EDINBURGH, The Dean, School of Medicine of the Royal Colleges, Surgeons' Hall.
GALWAY, The Registrar, University College.
GLASGOW, The Dean, St. Mungo's College.
The Dean, The Anderson College of Medicine.
The Mistress, Queen Margaret College, W.2 (for women students of the University of Glasgow).
LONDON, Charing Cross Hospital, The Dean of the Medical School, W.C 2.
Guy's Hospital, The Dean of the Medical School, S.E.1.
King's College, The Dean of the Medical Science Faculty, Strand, W.C.2.
King's College Hospital, The Dean of the Medical School, S.E.5.
London Hospital, The Dean of the Medical College, E.1.
London (Royal Free Hospital) School of Medicine for Women, The Dean, 8, Hunter Street, W.C.1.
Middlesex Hospital, The Dean of the Medical School, W.1.
St. Bartholomew's Hospital, The Dean of the Medical College, E.C.1.
St. George's Hospital, The Dean of the Medical School, S.W.1.
St. Mary's Hospital, The Dean of the Medical School, W.2.
St. Thomas's Hospital, The Dean of the Medical School, S.E.1.
University College Hospital, The Dean of the Medical School, W.C.1.
Westminster Hospital, The Dean of the Medical School, S.W.1.
SWANSEA, The Registrar, University College. (University of Wales. First year only.)

This section of the Educational Number would be incomplete without brief mention of the memorandum drawn up on behalf of the General Medical Council on the procedure to be adopted by those who desire to enter the profession of medicine, to which reference is made in the introductory article at page 386. The pamphlet (price 1s. post free) sets out in plain language the information for which the Council is often asked by prospective medical students or their guardians.

Universities in England and Wales

There are eleven universities in England and Wales, and some account of each of them follows. They all have now fully developed medical faculties.

UNIVERSITY OF OXFORD

The professional degrees conferred by this university are those of Bachelor of Medicine (B.M.) and Bachelor of Surgery (B.Ch.) (taken together), Doctor of Medicine (D.M.), and Master of Surgery (M.Ch.). It also grants a diploma in ophthalmology. On receiving the B.M., B.Ch. the candidate is entitled to registration by the General Medical Council. In favourable circumstances these degrees may be obtained in six or seven years from matriculation. Before receiving either, the candidate must have taken a degree in arts (B.A.), for which three years' residence within the university is necessary. This, however, does not necessarily mean deferment of professional study for that period, for the subjects chosen for the arts course may be to a great extent the same as those in which examinations would in any case have to be passed for the medical degree, and the courses are dovetailed together.

Women members of the university are admitted to medical degrees under the same conditions as those laid down for men in regard to examinations, courses of study, and fees, and under corresponding conditions as to residence at the university. Among the university diplomas open to women are those in anthropology and ophthalmology.

There are numerous avenues to the B.A. degree, but that which constitutes the *normal* course for medical students, as being the most closely related to their medical studies, is the following: By passing Responsions (or one of the examinations which are accepted as equivalent), some of the preliminary examinations in the Natural Science School,[1] in the first public examination; and one of the final honour examinations in the Final Honour School of Natural Science—physiology being that usually taken.

Responsions and the preliminary examinations in natural science may, provided the candidate's name is entered through a College, be passed before a candidate is a member of the university[2]; a Final Honour School may be taken at the end of the third or fourth academical year—that is, within nine or twelve terms respectively; the preliminary examinations of the Natural Science School may be taken as soon as Responsions has been passed or exemption obtained.

Professional Degrees

To obtain the B.M., B.Ch. degrees the candidate must first pass in four of the subjects of the preliminary examination of the Natural Science School—namely, physics, chemistry, zoology, and botany.

He then has two further examinations to pass—the First B.M. and the Second B.M. These take place twice a year, in June and in December. Every candidate at the first B.M. is examined in human anatomy, in physiology, and in organic chemistry, but is excused from physiology if he has obtained a first or second class in the Honour School of Physiology, and from organic chemistry if he has satisfied the examiners in Part I of the Honour School of Chemistry. Once he has passed this examination he can, on production of certain certificates, be examined as soon as he pleases in pathology, forensic medicine and hygiene, materia medica, and pharmacology (subjects of the Second Examination), but cannot present himself for the remaining subjects—medicine, surgery, and midwifery—until the eighteenth term from the day of his matriculation *unless he be already a registered medical practitioner*, and not until a period of at least thirty-three months has elapsed from the date of his passing the First Examination, and he must pass in all these three subjects at one and the same time.

Before admission to the Second B.M. examination the student must produce certificates of instruction from a medical school recognized by the university, of having acted as clinical clerk and dresser, each for six months, and as post-mortem clerk for three months, of attendance on labours, of instruction in infectious and mental diseases and ophthalmology, etc., and of proficiency in vaccination and the administration of anaesthetics,[3] and of three academic years of hospital attendance. He must also produce certificates of attendance in laboratory courses in pathology, bacteriology, and pharmacology, either in Oxford or in a recognized medical school.

D.M. and M.Ch. Degrees

A Bachelor of Medicine who wishes to proceed to the D.M. must have entered his thirtieth term and must present, for approval by the appointed examiners, a dissertation on a subject previously approved by the Regius Professor of Medicine. If a candidate for the M.Ch. he

[1] The four subjects of the medical preliminary examinations are four of the subjects in the natural science preliminary, and can be commenced directly after passing Responsions.
[2] Membership is constituted by Matriculation and by becoming a member of a College or a Hall or of St. Catherine's Society or of the Society of Oxford Home-Students.
[3] For details of the required certificates see *Examination Statutes*, Clarendon Press, Oxford, latest edition.

must have entered his twenty-first term and must pass an examination, which is held in June.

The examination for the diploma in ophthalmology is held annually in June.

Teaching

The several colleges provide their undergraduate members with tutors for all examinations up to the B.A. degree. In addition, the university provides certain courses of instruction, including lectures, demonstrations, and practical work, which cover all the subjects of the Preliminary Examination and First B.M., and to some extent those of the Final Examination.

Scholarships

Entrance Scholarships (of the maximum value of £100 p.a.) and Exhibitions (usually of a maximum value of £80) are awarded by various Colleges after competitive examination in Natural Science subjects, and are open to intending students of Medicine equally with other Natural Science candidates. These are usually tenable for four years and restricted to candidates under 19 years of age. Particulars can be obtained on application to the College tutors. At two Colleges (University and Pembroke) there are entrance scholarships restricted to intending students of medicine. Scholarships for women are also offered by various women's colleges, from the principals of which details of the examinations may be obtained. A Radcliffe Travelling Fellowship of £300 a year, tenable for two years, is conferred annually; candidates must have taken the B.M. degree. A Schorstein Research Fellowship of £200 a year for two years is awarded biennially. The Fellow must engage in research in one of the medical departments of the university. A George Herbert Hunt Travelling Scholarship of about £100 is awarded biennially to enable a young medical graduate to spend three months abroad in medical study. A Philip Walker studentship in Pathology of £200 a year, tenable for two years, is awarded biennially for the encouragement of research in pathology, as also are the Rolleston Memorial Prize and the Radcliffe Prize (£50), for research in natural science (including pathology), and the three Theodore Williams Scholarships in Anatomy, Physiology, and Pathology, of the value of £50 each, tenable for two years. A Radcliffe Scholarship in Pharmacology of £50 for one year, open to the university, is awarded annually by the Master and Fellows of University College.

Fees

An annual fee of £4 10s. is paid to the university for the first four years, being reduced to £1 when the B.A. has been taken. For the degrees the fees are: the B.A., £7 10s.; the B.M. and B.Ch., £14; the D.M., £20; the M.Ch., £12. College fees, varying in amount, are paid for the first four years of membership and in taking degrees. Tuition fees vary from £21 to £30. The minimum annual cost of living during the three university terms may be regarded as not less than £200, or for women not less than £140.

For further information application may be made to Dr. K. J. Franklin, Dean of the Medical School, University of Oxford.

UNIVERSITY OF CAMBRIDGE

The professional degrees given by this university are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.Chir.), each of which entitles the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants a diploma in medical radiology and electrology to medical practitioners, not necessarily graduates of the university. Information regarding this diploma will be found in a later section under the heading "Radiology." A candidate for the M.B., B.Chir. degrees need not possess a degree in arts; it is sufficient if he has passed the Previous Examination or some other examination accepted by the university as its equivalent. Most students, however, are advised to take the B.A. degree, preferably by obtaining honours in the Natural Sciences Tripos. The attainment of a sufficient standard in certain subjects in this Tripos will secure exemption from the corresponding tests in the M.B. course. Members of Girton College and Newnham College are admitted to the examinations.

Professional Examinations

An explanation of the changes in the medical curriculum at Cambridge, which come into force in October, 1934, will be found in a leading article published in the *British Medical Journal* of July 7th, 1934 (p. 26).

To obtain the M.B. degree the candidate must pass the First and the Final M.B. Examinations and keep an Act. The B.Chir. degree (which is a registrable qualification) may be obtained after passing the Final Examination without keeping an Act.

First M.B.—This comprises (1) general and inorganic chemistry, (2) physics, (3) elementary biology, (4) organic chemistry. The parts may be taken together or separately. In either case the candidate, before admission to examination, must have passed or been exempted from the previous examination. Certain exemptions from the First M.B. Examination are allowed; the regulations may be obtained from the Registrary. An examination in each part is held three times in the year.

A candidate for the Final Examination must have (*a*) completed the First Examination; (*b*) dissected the whole body adequately and thoroughly; (*c*) attended an approved course, and passed an examination in Pharmacology; (*d*) attained the honours standard in some Tripos; (*e*) attended an approved course, and passed an examination in anatomy and (*f*) in physiology.

Final M.B.—This is divided into two parts, to neither of which the candidate is admitted until he has fulfilled the conditions previously mentioned. A candidate for the first part, which deals with the principles and practice of surgery (including special pathology) and midwifery and diseases peculiar to women, must have completed five years of medical study and be signed up in these subjects, and have completed two years and a half of hospital practice. Before admission to the second part the candidate must have completed five years of medical study, and be duly signed up in all subjects and have completed three years of hospital practice. The examination is in the principles and practice of physic (including diseases of children, mental diseases, and medical jurisprudence), pathology (including hygiene and preventive medicine), and pharmacology (including therapeutics and toxicology). The Final M.B. examinations are held twice a year—in June and December.

Act for the M.B.—Before receiving his M.B. degree a candidate who has passed the Final M.B. examinations has to write a thesis. This he reads in public on an assigned day, and is then questioned concerning it and other subjects of medicine by the Regius Professor of Physic. If approved at this test he is then certified as having "kept the Act," and in due course receives his degree. Medical degrees may be taken in absence by those living abroad, the candidate sending to the Registrary a dissertation, which is laid before the Degree Committee.

The Higher Degrees

The M.D. degree may be taken by a graduate of the University of eight years' standing who has passed the Final M.B. Examination, after writing a thesis approved by the M.D. Degree Committee, and keeping a further Act. He may also be allowed or required to take an examination, oral or written, or both, on the field of Medicine within which the subject of his thesis falls.

A candidate for the M.Chir. degree who is an M.A. may be admitted to the examination after he has become legally qualified to practise surgery. Other candidates may be admitted when two years have elapsed after they have completed the requirements for the B.Chir. degree, and may be admitted to the M.Chir. degree after three years have elapsed since they were admitted to the B.Chir. degree. The examination comprises pathology, surgery, surgical anatomy, and surgical operations. The tests are partly in writing, partly oral, and partly practical: they include the writing of an extempore essay. The examination is held in February in each year.

FEES

In addition to college fees, tutorial fees, and the expense of living, the following examination fees are payable: First M.B., £5 5s; tests in Pharmacology, Physiology, and Anatomy, £1 1s.; Final M.B., £12 12s. For schedules referring to the examinations, lists of schools and hospitals recognized by the university, and other information, application should be made to the University Registrary, Cambridge.

UNIVERSITY OF LONDON

Under the regulations of the University of London the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Bachelor of Surgery, Master of Surgery in four branches, Doctor of Medicine in six different branches, Bachelor of Dental Surgery, and Bachelor of Pharmacy. The university has its own matriculation examination, and it is most advisable that candidates should obtain and carefully study the booklets relating to it. The matriculation examination is open to any person, of either sex, who has attained the age of 16. It is held in January, June, and September, and lasts four days; the first two take place both in London and in certain provincial centres; the September examination is held in London only.

In no circumstances is a degree granted to anyone in less than three years after the date at which he passed the matriculation examination or obtained registration in some other way. All medical students must normally spend not less than five and a half years in professional study subsequent to matriculation, of which the last three years must be spent at a school of advanced medical studies.

Professional Examinations

M.B., B.S.—There are three examinations, the last two being subdivided. They are held twice a year.

The First Examination (held in July and December) covers inorganic chemistry, general biology, and physics, there being two papers, a practical test, and a possible oral test in each subject. The names of successful candidates are placed in alphabetical order, with a note as to any subject in which a candidate has distinguished himself or herself.

The Second Examination is held in March and July. Part I covers organic chemistry, the candidate's knowledge being tested as in the earlier examination. Candidates for Part II must have passed the First Examination at least eighteen months previously, besides having completed Part I of the Second Examination. The subjects are anatomy, physiology, and pharmacology, the tests being written, oral, and practical. Candidates who fail in pharmacology may sit for re-examination in that subject alone if the examiners think fit, and candidates who pass in pharmacology only may similarly be credited with that subject.

No candidate, unless he is already a registered medical practitioner, is admitted to the Third M.B., B.S. Examination within three academic years from the date of his completing the Second Examination. The subjects are medicine (including mental diseases), pathology, forensic medicine and hygiene, surgery, and obstetrics and gynaecology. They may be divided into two groups, one comprising medicine, pathology, forensic medicine, and hygiene, and the other surgery and obstetrics and gynaecology. Either group may be taken first at the option of the candidate, or the groups may be taken together. Only candidates who show a competent knowledge of all the subjects comprising a group are passed. There is no separate examination held for honours, but the names of successful candidates, who have passed both groups of the examination at one time, are divided into an honours list and a pass list, and a university medal may be awarded the candidate who has most distinguished himself in the whole examination. A supplementary list is issued of candidates who have passed in one group only.

The Higher Degrees

M.D.—An examination for the M.D. is held twice yearly—in December and July. Every candidate must have passed the examination for the M.B., B.S., unless he became M.B. before May, 1904. He may present himself for examination in any one of the following branches: (1) medicine, (2) pathology, (3) mental diseases and psychology, (4) midwifery and diseases of women, (5) hygiene, (6) tropical medicine, and, if he wishes, may pass also in another branch at a subsequent examination.

Two years must elapse between acquiring the M.B., B.S., and sitting for the M.D. in any branch, except that in the case of Branches I–IV a candidate who has obtained honours at the M.B., B.S. Examination may enter for the M.D. Examination after one year. Candidates may also be admitted to the M.D. Examination (Branches I–VI) one year after taking the M.B., B.S. Examination on the grounds of exceptional experience in their subject. Certificates of approved appointments are required for the M.D. (Branches I–IV), except in the case of candidates who have been engaged in professional practice for five years. In each branch the scheme of examination is the same: two papers on its special subject, a paper on an allied subject—for example, medicine in the case of Branch IV, pathology in Branch I—an essay on one of two suggested topics connected with the special subject, and a clinical or other practical test. Both written and practical examinations must be passed, though exemption can be obtained from the former in exceptional circumstances. In any branch of the M.D. Examination a gold medal of the value of £20 may be awarded.

M.S.—The regulations with regard to the Mastership in Surgery are of a corresponding kind, but there are four branches in which it may be obtained—general surgery, dental surgery, ophthalmology, and laryngology, otology, and rhinology.

FEES

For Matriculation: 2½ guineas for each entry. First Examination: 6 guineas for each entry to the whole examination. For re-examination in one subject the fee is 2 guineas. Second Examination, Part I: 3 guineas for the first and each subsequent entry. Second Examination, Part II: 9 guineas for each entry to the whole examination. For re-examination in Pharmacology the fee is 4 guineas. For re-examination in Anatomy and Physiology the fee is 6 guineas. M.B., B.S. Examination: 12 guineas for each entry to the whole examination, and 6 guineas for examination or re-examination in either group. M.D. and M.S. Examinations. 20 guineas, and 10 guineas on re-examination.

Inquiries should be addressed to the Academic Registrar, the University of London, South Kensington, S.W.7.

UNIVERSITY OF BIRMINGHAM

This university confers medical and surgical degrees—namely, M.B., Ch.B., M.D., Ch.M., and M.D. (State Medicine)—and also diplomas and degrees in State medicine and dentistry. The M.B., Ch.B. candidate may also combine with the earlier part of his medical curriculum courses leading to the ordinary B.Sc. degree in anatomy and physiology. The degree of B.Sc. with honours in one of these subjects requires an extra year. The full course of study for the degrees of M.B., Ch.B. extends over six years. The Senate has power to accept courses of study and examinations passed at other recognized universities as exempting from the examinations in physics, chemistry, biology, and organic chemistry. In the case of such students at least three years must be spent in attendance upon classes at the university. A degree of Ph.D. is also conferred for research study in medicine under special regulations. Candidates must be graduates in medicine of a recognized university.

Students entering the Medical Faculty for the M.B., Ch.B. degrees must have passed—

(1) Either (*a*) the matriculation examination of the Joint Board of the Universities of Manchester, Liverpool, Leeds, Sheffield, and Birmingham; or (*b*) some other examination recognized as equivalent to the matriculation. Candidates

for medical degrees are required to have passed in English literature and mathematics, and are recommended to take Latin and a science subject—chemistry or physics—at the matriculation examination. The matriculation examination of the Joint Board is held in July and September. The regulations and the list of examinations accepted in lieu thereof will be sent on application to the Secretary to the Board, Joint Matriculation Board, 315, Oxford Road, Manchester.

(2) A recognized pre-registration examination in the subjects of chemistry, physics, and biology—for example, the higher school certificate of the Joint Matriculation Board; or a candidate may attend first-year courses in the university, October to June (chemistry, physics, and biology)—that is, First M.B., Ch.B. This examination may be passed in two sections; not less than two subjects must be passed on first entry.

Professional Examinations

The candidate for the M.B., Ch.B. degrees has five examinations to pass, subsequent to passing the First M.B., Ch.B. Examination or exemption therefrom. In the Second (Part II) and Final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again.

The First M.B. deals with physics, chemistry, and biology (pre-registration). The Second M.B. (Part I) comprises the subject of organic chemistry. The Second M.B. (Part II) comprises anatomy and physiology, and the student must pass in both simultaneously. The Third M.B. comprises pathology and bacteriology taken as one complete subject. The fourth M.B. takes place at the end of the fifth year, the subjects being forensic medicine, toxicology, public health, and therapeutics (inclusive of pharmacology and materia medica).

Final M.B.—This comprises medicine, surgery, midwifery and diseases of women, ophthalmology, and mental diseases. The candidate, in addition to more ordinary certificates, must be prepared with a certificate of having acted as a post-mortem clerk for three months, and received special instruction in anaesthetics and clinical instruction in diseases peculiar to women, asylum ward work, ophthalmology, children's diseases, venereal diseases, ear and throat and skin diseases, etc. In respect to ophthalmology he must show that he has learnt refraction work. He also has to present to the examiners at the time of his examination a short written commentary on a gynaecological subject or case investigated during the period of gynaecological clerking.

M.D.—An ordinary candidate for this degree must be an M.B., Ch.B. of not less than one year's standing. He presents an original thesis for approval, and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch.M. are of the same general character. Subject to certain requirements as to special research or other post-graduate study, graduates of other universities may obtain the M.D. and Ch.M. in the same way as holders of the Birmingham M.B., Ch.B.

The degree of M.D. (State Medicine) is open to M.B., Ch.B. graduates of the university who possess also a diploma in public health or degree in sanitary science or public health, recognized by the university. The period of post-graduate study for this degree must occupy one year in the case of Birmingham M.B., Ch.B. graduates, and two years in the case of graduates of other universities.

The degree of Ph.D. is open to qualified medical practitioners under special conditions applicable in the Faculty of Medicine. Under these regulations the necessary attendance and research during a period of two years may be carried out in the laboratories of the university or in associated hospitals.

Fees

The fee for Matriculation is £2 (payable to the Joint Matriculation Board); £2 10s. for First M.B. Examination (if taken in university), and £2 10s. for each of the first four Professional Examinations; M.B., Ch.B. degree fee, £10; M.D. and Ch.M. Examinations, £12 10s. each. For further particulars application should be made to the Registrar or the Dean of the Medical Faculty, University of Birmingham, Edmund Street.

UNIVERSITY OF BRISTOL

In the Faculty of Medicine the following degrees are conferred: Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Dental Surgery (B.D.S.), and Master of Dental Surgery (M.D.S.). There are also the following diplomas: diploma in public health (D.P.H.), diploma in dental surgery (L.D.S.), and diploma in veterinary State medicine. All candidates for degrees in medicine, surgery, and dentistry are required to reach matriculation standard in the school certificate examination, or to pass such examination as may be regarded as equivalent by the Senate. All courses, degrees, and diplomas are open to men and women alike.

Conjoined Degrees of Bachelor of Medicine and Bachelor of Surgery.—Candidates must be not less than 21 years of age and have pursued the courses prescribed by university regulations during not less than five years after passing the First Examination in chemistry and physics, and entry upon professional study at a medical school, of which three shall have been spent in the university, and two of these three subsequent to passing the Second Examination. All candidates for the degrees of M.B., Ch.B. are required to satisfy the examiners in the several subjects of three examinations.

The First Examination.—The subjects of examination are: chemistry (inorganic), physics, and biology, the courses pursued being those for the time being approved for the intermediate part of the B.Sc. curriculum. This part of the curriculum shall extend over one year. (Candidates who have passed the higher school certificate approved by the Board of Education in these subjects will not be required to sit for the First Examination and will be regarded as having completed one year of study.)

The Second Examination.—The subjects of examination are: organic chemistry (Part I) and anatomy and physiology (Part II).

The Final Examination.—The subjects of examination are: materia medica and pharmacy, pharmacology and therapeutics, general pathology, morbid anatomy, and bacteriology (Part I); special pathology, forensic medicine, toxicology, and public health, obstetrics (including diseases of women), surgery (systematic, clinical, practical, and operative, including ophthalmology and oto-rhino-laryngology), medicine (systematic, clinical, and practical, including mental diseases) (Part II). The subjects included in Part II may be taken in two groups—namely, Group I: surgery and obstetrics; Group II: medicine, public health, special pathology, forensic medicine, and toxicology. Candidates may pass Parts I and II together or separately, and the two groups of Part II may likewise be taken together or separately, but no student can obtain honours who elects to take the two groups of Part II separately. Forensic medicine and toxicology may be taken either with Part I or with Group II of Part II.

Degree of Doctor of Medicine.—Candidates must be Bachelors of the university of not less than two years' standing as such, and may elect either (1) to pass an examination in general medicine, or (2) to pass an examination in State medicine, or (3) to present a dissertation. The candidate who elects to pass the examination in State medicine must hold a diploma in public health of some university or college, and the candidate who elects to present a dissertation may be examined in the subject thereof.

Degree of Master of Surgery.—The degree may be taken in general surgery or in special subjects. Candidates shall be Bachelors of the university who have practised for two years in an approved hospital (including the holding of an approved appointment for six months), and one of the two years shall have been spent in a hospital with a medical school attached. They shall present a dissertation and pass an examination. For general surgery, the examination shall include a written examination in surgery, a written examination in surgical anatomy and surgical pathology, a clinical examination, an oral examination, and an examination in operative surgery. For special subjects—that is, ophthalmology or oto-rhino-laryngology or gynaecology—the examination shall include

a written examination in the anatomy, physiology, and pathology of the region of the body concerned (including in the case of ophthalmology, physiological optics), and a written examination in general surgery together with a written, oral, and clinical examination in the particular branch of surgery concerned, as well as an examination in operative surgery of the region concerned.

Diploma in Public Health.—Candidates must be at least 23 years of age, be fully registered medical practitioners of not less than two years' standing as such, and have passed the examination prescribed by regulation. The examination is divided into two parts.

UNIVERSITY OF DURHAM

To its own undergraduates, who may be of either sex, this university grants the degrees of Bachelor of Medicine and Bachelor of Surgery (M.B., B.S.), and also grants the higher degrees of Doctor of Medicine (M.D.), Master of Surgery and Doctor of Surgery (M.S. and D.Ch.), Bachelor of Hygiene, Doctor of Hygiene, and Bachelor of Dental Surgery and Master of Dental Surgery (B.D.S. and M.D.S.); it also grants diplomas in public health, psychiatry, and dental surgery. The university accepts the Durham University school certificate examination (if a sufficient standard is obtained in certain specified subjects) for matriculation purposes, but also accepts the tests of a considerable number of other educational bodies as a full or partial equivalent. A list may be obtained on application. In addition to satisfying the matriculation requirements of the university, every student must (1) pass a pre-registration examination in physics and inorganic chemistry conducted or recognized by the university, and (2) be registered on the books of the General Medical Council. The university requires that at least three years be spent in residence in the university; in certain cases candidates may obtain exemption from the First and Second Examinations, but the later professional examinations must be passed in the university.

Professional Examinations

There are four professional examinations for the M.B., B.S. degrees. The First Examination is held in March, June, and December; the Second and Third Examinations in March and June; and the Final Examination in June and December. The first deals with biology and chemistry in relation to medicine; the second with anatomy and physiology; the third with pathology, bacteriology, materia medica, pharmacology and pharmacy, medical jurisprudence, and public health. At the Final M.B., B.S. the candidate is examined in medicine, including therapeutics, and clinical medicine; surgery and clinical surgery; midwifery and diseases of women and children; clinical and practical midwifery and gynaecology; and clinically in psychological medicine, diseases of the throat, nose and ear, diseases of the skin, diseases of the eye, and diseases of children.

M.D.—This degree is only open to Bachelors of Medicine of the university. They must be of at least two years' standing, and must comply with the regulations printed in the Calendar of the College of Medicine.

M.S.—Candidates for this degree must have been engaged in practice for at least two years subsequent to qualifying M.B., B.S.Durham. The subjects of the examination are surgery, systematic and clinical, surgical anatomy and pathology, and surgical operations.

D.Ch.—The university grants also the degree of Doctor of Surgery. Candidates for this degree must be registered medical practitioners, not less than 24 years of age. They must devote three years, subsequent to obtaining a registrable qualification, to the study of surgery and ancillary subjects; one at least of the three years must be spent in the university. The candidate must submit to the professor of surgery the course of study he proposes to follow, and this course must be approved by the Board of Faculty of Medicine.

One year must be devoted mainly to work in the departments of anatomy, physiology, pathology, and bacteriology, and the candidate must submit evidence of having so worked. Not less than six months of another year must be spent as a resident surgeon in a recognized teaching hospital, and the rest of the year in the study of surgery in a recognized medical centre. Not less than six months of one of the three years must be spent in surgical study abroad.

The Degree of Bachelor of Hygiene and the D.P.H.

A period of not less than two years must elapse between the attainment by a candidate of a registrable degree or qualification in medicine, surgery, and midwifery and his admission to the final examination for the degree of B.Hy. or for the D.P.H. of the University as the case may be. The curriculum extends over a period of not less than twelve calendar months (or an academic year of whole-time study covering a period of not less than nine calendar months) subsequent to the attainment of a registrable degree or qualification. Candidates for the B.Hy. must take out the curriculum for Part I of the examination at the University of Durham, but for the D.P.H. may do so either at the university or at any medical school or institution recognized by the university. The examination is divided into two parts. Part I is practical, written, and oral, and includes the subjects of bacteriology and parasitology (including immunology, serology, medical entomology, etc.) especially in their relation to diseases of man, and to those diseases of the lower animals which are transmissible to man; chemistry, physics, radiology, and electrology in relation to public health; physiology and biochemistry in their application to nutrition and hygiene; and meteorology and climatology in relation to public health. The subjects in Part II include the principles of public health and sanitation; epidemiology and infectious diseases; vital statistics; sanitary law and administration (including public medical services); sanitary construction and planning; and public health administration. This part of the examination is written and oral, and includes practical examinations in infectious diseases; food inspection; inspection of premises, dwelling-houses, factories, workshops, schools, etc.

Candidates are not admitted to examination in either part until after they have completed the prescribed courses of instruction in the required subjects.

Doctor of Hygiene

Candidates for the degree of Doctor of Hygiene must be Bachelors of Hygiene of the university of two years' standing, and are required to satisfy the examiners that they have conducted original research in the subject of public health.

Diploma in Psychiatry.

Candidates must be registered medical practitioners, and, unless qualified before January 1st, 1911, must have attended, subsequent to passing their qualifying examinations, courses of instruction in: (*a*) anatomy; (*b*) physiology; (*c*) pathology; (*d*) bacteriology; (*e*) psychology and experimental psychology; (*f*) clinical neurology; (*g*) psychiatry; (*h*) clinical psychiatry. The examination consists of two parts, namely: (1) anatomy, physiology, pathology, and bacteriology; (2) psychology and experimental psychology, neurology, and psychiatry (systematic and clinical); and candidates may present themselves for the whole examination or for either part separately.

FEES

The following fees are payable: Matriculation, £2; Examinations, Pre-registration, £3 3s.; First, Second, and Third M.B., B.S., each £5; Final M.B., B.S., £15; M.D. and M.S., each £5; B.Hy. and D.P.H., £12 12s., D.Psy., £10 10s., and D.Hy. and D.Ch., each £20; First, Second, and Third L.D.S., each £3 10s., and Final L.D.S. £5; First, Second, and Third B.D.S., each £5, Final B.D.S. £8; and M.D.S. £5. For degrees and diplomas: M.B., B.S., B.Hy., and B.D.S., each £6 6s. *plus* the sum of 10s. if it is the initial degree taken in the university; M.S. and M.D.S., each £6 6s.; M.D., D.Ch., and D.Hy., each £10; D.P.H., D.Psy., and L.D.S., each £3.

Further information may be obtained from the Dean of the College, University of Durham College of Medicine, Newcastle-on-Tyne.

UNIVERSITY OF LEEDS

The degrees granted in the Medical Faculty of this university are Bachelor of Medicine, Bachelor of Surgery (M.B. and Ch.B.), and Bachelor of Dental Surgery (B.Ch.D.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), and Master of Dental Surgery (M.Ch.D.). It also gives diplomas in public health, in psychological medicine, in dental surgery, and in nursing.

Candidates for the M.B. must have attended courses of instruction approved by the university for not less than five years, two at least of such years having been passed in the university, at least one year being subsequent to the date of passing the first examination. They must also have matriculated by satisfying the examiners in:

I. *Either* English Composition and English Literature, *or* English Composition and History.
II. *Either* Mathematics *or* Latin.
III. IV. V. *Three* other subjects not already taken under I and II above, chosen from the following list:

(1) English literature; (2) History; (3) Geography; (4) Greek; (5) Latin; (6) French; (7) German; (8) Some one other language approved by the Board; (9) Mathematics; (10) Mechanics; (11) Physics; (12) Chemistry; (13) General experimental science; (14) Natural history; (15) Botany.

Provided that (*a*) candidates who take Mathematics under II above must include one of the subjects 4—8; (*b*) candidates who take Latin under II above must include one of the subjects 9—15. In all cases Mathematics is a compulsory subject for admission to the Faculty of Medicine.

Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination.

Professional Examinations

The examinations for the M.B., Ch.B. number three.

The First Examination.—This consists of four parts (1) physics and inorganic chemistry, (2) organic and physical chemistry, (3) botany, (4) zoology, each of which may be taken separately, but candidates are not permitted to start their second year's work until Parts 1, 2, and 3 have been passed.

The Second Examination.—This consists of Part I, materia medica and practical pharmacy; Part II, anatomy and physiology. Candidates will be allowed to pass each part separately.

The Final Examination.—The Final Examination consists of: Part I, pharmacology and pathology and bacteriology; Part II, medicine, surgery, obstetrics and gynaecology; Part III, forensic medicine, public health, and therapeutics. Part I may be taken at the end of the second clinical year, and must be passed before Parts II and III are taken. Parts II and III may be taken at the end of the third clinical year but not before the completion of the fifth year of medical study. If taken separately Part III may not be passed before Part II.

M.D.—Candidates for this degree must be bachelors of medicine and bachelors of surgery of the university, and subsequently to having graduated must have completed two years of hospital practice or special study approved by the university; or four years in the practice of their profession in one or other of its various branches; six months' hospital practice or special study to count as the equivalent of one year's ordinary practice. Any subject of the medical curriculum except surgery may be chosen for the examination, but a thesis, the title of which must previously receive the approval of the Board of the Faculty of Medicine, may be submitted, and if it is adjudged to be of exceptional merit the candidate may be exempted from further examination.

Ch.M.—The candidate for this degree must have been admitted to the M.B., Ch.B. of the university not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery. He must also have attended certain courses, including one on ophthalmology and one on pathology and bacteriology; he is then examined in surgery in all its branches and in ophthalmology and pathology and bacteriology.

Fees

The Matriculation fee is £2, and on readmission £2 or £2 2s. 6d.; for each of the other examinations £6 and £6 on readmission.

The fees for the M.D. and Ch.M. degrees are each £10, and the same on readmission. The fee for conferment of each of these degrees is £5.

UNIVERSITY OF LIVERPOOL

This university, besides granting degrees in medicine (M.B. and M.D.) and in surgery (Ch.B., M.Ch.Orth., and Ch.M.), awards degrees in dental surgery (B.D.S. and M.D.S.), and degrees in veterinary science (B.V.Sc., M.V.Sc., and D.V.Sc.). Diplomas are awarded in dental surgery (L.D.S.), tropical medicine (D.T.M.), tropical hygiene (D.T.H.), public health (D.P.H.), veterinary hygiene (D.V.H.), and medical radiology and electrology (D.M.R.E.). The degree of Doctor of Philosophy (Ph.D.) may also be taken in the Faculty of Medicine.

Matriculation

The matriculation examination is governed by the Joint Matriculation Board, 315, Oxford Road, Manchester, 13, which accepts, under certain conditions, the tests of several other bodies as its equivalent. Candidates will be required to have included mathematics among the subjects in which they have passed at such examination.

Professional Examinations

Candidates for the M.B., Ch.B. degrees have three examinations to pass, the first including (1) chemistry, (2) biology (zoology and botany), (3) physics.

Second M.B.—This test covers (1) anatomy, (2) physiology, including biochemistry and histology.

Final M.B.—The subjects of the Final Examination are: Part I—(*a*) pathology; (*b*) pharmacology and general therapeutics. Part II—(*a*) forensic medicine and toxicology; (*b*) public health. Part III—(*a*) obstetrics and diseases of women; (*b*) surgery, systematic, clinical, operative and practical, including ophthalmology; (*c*) medicine, systematic and clinical, including therapeutics, mental diseases, and diseases of children. Candidates may take Parts I, II, and III separately, provided that candidates may not present themselves for Part III until they have completed the sixth year of medical study and have passed the examinations in Parts I and II.

M.D.—May be conferred on graduates (M.B., Ch.B. Liverpool): (*a*) on candidates of two years' standing who present a thesis acceptable to the Faculty, and certified to be the candidate's own work, together with, if candidate desires, copies of published original papers upon medical science—oral examination on subject of thesis; (*b*) on candidates of five years' standing by examination in (*a*) Medicine and (*b*) a selected branch of Medicine.

Ch.M.—May be conferred on graduates (M.B., Ch.B. Liverpool) after examination. Other information concerning the diplomas of this university and its medical school will be found on page 418.

M.Ch.Orth.—May be conferred on graduates in Medicine of Liverpool or other approved university and graduates of a Faculty other than Medicine of Liverpool or other approved university who are Fellows of the Royal College of Surgeons of England, Edinburgh, or Ireland, or of the American College of Surgeons.

Fellowships, Scholarships, and Exhibitions

The university awards Fellowships annually to students of distinguished merit, as follows:

(1) John Rankin Fellowships in Anatomy, two, each of the value of £120, tenable for two years. (2) Ethel Boyce Fellowship in Gynaecology, value £100 and tenable for one year, open to fully qualified medical students of either sex. (3) John W. Garrett International Fellowship in Bacteriology, value £100 and tenable for one year. (4) Robert Gee Fellowship in Human Anatomy, value £100 and tenable for one year. (5) Holt Fellowships in Physiology and Pathology, two in number, value £150 each and tenable for one year. (6) Johnston Colonial Fellowship in Biochemistry, value £100 and tenable for one year. (7) Thelwall Thomas Fellowship in Surgical Pathology, value £150 and tenable for one year. (8) Lady Jones Fellowship in Orthopaedic Surgery, one, value £200, offered every two years.

There are, in addition, scholarships and exhibitions open to medical students.

VICTORIA UNIVERSITY OF MANCHESTER

This university grants the four ordinary degrees in medicine and surgery—M.B. and Ch.B. and M.D. and Ch.M. ; a degree and diploma in dental surgery ; a diploma in public health ; a diploma in psychological medicine ; a diploma in bacteriology ; and a diploma in pathology. Candidates for degrees must pass the special matriculation examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof: see the prospectus of the Joint Matriculation Board), and study at the university itself for at least two years of the six years' curriculum, subsequent to the passing of the First M.B. Examination. The matriculation examination comprises (1) Latin, (2) mathematics, (3) the English language, its literature and history, (4) mechanics, (5) one subject at choice as approved by the Joint Board. It is held in July and September.

Professional Examinations

M.B., Ch.B.—There are four examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. The First M.B. is divided into Part I, chemistry and physics ; Part II, biology—(*a*) botany, (*b*) zoology. The parts may be taken separately or together. At the Second M.B. the candidate is examined in anatomy (including histology) and physiology ; at the third in pathology, bacteriology, and pharmacology (including materia medica and practical pharmacy). The Final Examination is divided into two parts, which may be taken separately. Part I consists of (*a*) forensic medicine and toxicology, and (*b*) hygiene and preventive medicine. Part II consists of (*a*) medicine, including dermatology, diseases of children, and mental diseases ; (*b*) surgery, surgical pathology, and diseases of the eye and of the ear, nose, and throat ; (*c*) obstetrics and gynaecology.

M.D.—A candidate for this degree must be a Bachelor of Medicine of the university of at least one year's standing. He has a choice between presenting an original dissertation or undergoing a written (as well as a practical and clinical) examination in medicine, and a written and practical examination in pathology, and one other subject selected by himself.

Ch.M.—A candidate must have held, since becoming Ch.B., and for not less than twelve months, a post in a public institution affording opportunity for the study of the branch of surgery in which examination is desired. The examination in Branch I comprises the general field of surgery ; Branch II, obstetrics and gynaecology; Branch III, ophthalmology ; Branch IV, otology, laryngology, and rhinology.

B.Sc. and M.Sc.—The ordinary degree of B.Sc. in the Schools of Anatomy and Physiology may be obtained by students in medicine who in their third year of study for the degree of M.B., Ch.B. complete the additional courses in these subjects prescribed for this degree. Candidates for the Honours degree of B.Sc. in anatomy or physiology who are students in medicine are required to attend courses in advanced anatomy and physiology for four terms after passing the Second Examination for the degrees of M.B., Ch.B. Graduates in science of this university, of not less than one year's standing from the date of their graduation as Bachelors, may proceed to the degree of M.Sc. by the presentation of an approved thesis on some subject coming within the scope of the Faculty of Science.

FEES

The following examination fees are payable: Matriculation, £2 ; on readmission, £2. Each M.B. examination, £8 8s. ; on readmission, £3 3s. M.D., including the conferring of the degree, £15 15s. Ch.M., £10 for the examination and £10 10s. for conferment of degree. Application for further information should be addressed to the Dean of the Medical School.

UNIVERSITY OF SHEFFIELD

The degrees of this university (M.B., Ch.B., M.D. and Ch.M., B.D.S., and M.D.S.), and the diploma of licentiate in dental surgery, are open to candidates of either sex. Candidates for a degree must have matriculated in the university or have passed such other examination as may be recognized for this purpose, and have passed the preliminary examination in chemistry and physics.

Professional Examinations

A candidate for the degrees of M.B., Ch.B. must produce certificates that he will have attained the age of 22 years by the day of graduation ; that he has pursued the courses of study required by the university regulations during not less than five and a half years subsequent to the date of his matriculation or exemption from matriculation, three of such years at least having been passed in the Faculty of Medicine of the university, one at least being subsequent to the passing of the Second Examination. The following examinations must be passed in due order.

First Examination.—The subjects are chemistry, physics, and biology. Candidates who have passed the Intermediate Examination of the Faculty of Pure Science in any or all of the subjects of the First M.B. Examination will, on payment of the fee for the latter examination, be deemed to have passed it when they have passed in such subjects as they did not take for the Intermediate B.Sc. Examination. Candidates on presenting themselves for this examination are required to furnish certificates of having attended for not less than one year approved courses of instruction, after matriculation, in (i) chemistry, inorganic and organic ; (ii) physics ; (iii) biology ; and of having passed or obtained exemption from the preliminary examination in chemistry and physics.

Second Examination.—The subjects are anatomy and physiology (Part I). Candidates must have passed the First Examination, and must have attended (1) courses on anatomy, including lectures and practical anatomy, during five terms ; (2) courses on physiology, including lectures and practical physiology, during one year.

Third Examination.—The subjects are pathology and pharmacology, applied anatomy, and physiology (Part II). Candidates must have attended courses of instruction in pathology for five terms, in pharmacology for three terms (and one term in pharmacy), in applied anatomy for four terms, and in physiology (Part II) for six terms.

Final Examination.—The subjects are: Part I, forensic medicine and public health ; candidates must have attended courses for one term in each subject. Part II, medicine (including mental diseases and diseases of children and vaccination), special pathology (including morbid anatomy and clinical pathology), and therapeutics. Part III, surgery (including the administration of anaesthetics, diseases of the ear, nose, and throat, ophthalmology, and surgical pathology), and obstetrics and gynaecology (including ante-natal and post-natal practice and infant hygiene). Candidates for Parts II and III must have completed a minimum of five and a half years of study.

M.D.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch.B. at least three years previously, must present a thesis embodying observations in some subject approved by the Professor of Medicine, and must pass an examination in the principles and practice of medicine.

Ch.M.—Candidates for the degree of Master of Surgery must have passed the examination for the degrees of M.B., Ch.B. at least three years previously, and must, since taking the degrees of M.B., Ch.B., have held for not less than twelve months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of practical surgery. The subjects of examination are systematic, clinical, and operative surgery, surgical anatomy, surgical pathology, and bacteriology.

Other information concerning this university will be found in the section devoted to Provincial Medical Schools.

UNIVERSITY OF WALES

The Charter and statutes of the University of Wales provide *inter alia* for a School and a Faculty of Medicine and for the granting of the following degrees: Bachelor in Medicine (M.B.), Bachelor in Surgery (B.Ch.), Master in Surgery (M.Ch.), and Doctor in Medicine (M.D.).

A candidate for the M.B., B.Ch. is required to pursue a course of study of not less than six academic years

subsequent to matriculation in the university, and of these years at least three must have been passed in one of the constituent colleges of the university. These are the University College of Wales, Aberystwyth ; University College of North Wales, Bangor ; University College of South Wales and Monmouthshire, Cardiff ; and University College of Swansea. He must hold an arts or science degree of the University of Wales, or of some other university approved for this purpose. Certain of the courses of study pursued for a B.Sc. or a B.A. degree may be counted as courses required for the degrees in the Medical Faculty.

The courses for the M.B., B.Ch. are divided into two sections, of which the first includes the preliminary subjects—physics, chemistry, botany, zoology ; and the ancillary subjects—organic chemistry, human anatomy, and physiology. Study of the preliminary subjects and of organic chemistry must extend over at least one academic year ; study of physiology and anatomy must extend over at least two academic years ; the first section of the course must occupy not less than three years.

The second section includes courses in pathology, bacteriology, pharmacology, hygiene and forensic medicine, medicine, surgery, and obstetrics and gynaecology, and cannot be commenced until the examinations relating to the preliminary and ancillary courses have been passed. Examinations in all the subjects are held in June of each year, and in pharmacology, pathology, medicine, surgery, obstetrics and gynaecology, in December also.

The university also provides courses of study in public health and in tuberculosis, and awards Diplomas in Public Health (D.P.H.) and Tuberculous Diseases (T.D.D.). Candidates for these diplomas must possess a medical qualification registrable for practice in Great Britain and Ireland, and must have completed courses of study as prescribed by the regulations.

Further particulars and prospectuses may be obtained from the Secretary, Welsh National School of Medicine, The Parade, Cardiff.

Welsh National School of Medicine

This school was reconstituted under the provisions of a Royal Charter granted to the school in February, 1931. The school maintains departments of medicine, surgery, obstetrics and gynaecology, pathology and bacteriology, materia medica and pharmacology, tuberculosis, and preventive medicine and public health.

Full particulars of the conditions of admission to the school and the courses of instruction provided may be obtained on application to the Secretary, Welsh National School of Medicine, The Parade, Cardiff.

English Medical Corporations

There are in England three medical corporations which grant licences to practise—the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the Conjoint Board in England. Details concerning this body, its component Colleges, and the third licensing body here follow.

THE CONJOINT BOARD

This body—the Examining Board in England—deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who pass the required examinations for the Licence and for the diploma of Member respectively. The successful candidate is then entitled to register as L.R.C.P.Lond., M.R.C.S.Eng. It performs the same task in connexion with diplomas in public health, tropical medicine and hygiene, ophthalmic medicine and surgery, psychological medicine, laryngology and otology, gynaecology and obstetrics, and medical radiology, jointly issued by the two Colleges. Under the present regulations every candidate for the L.R.C.P. and M.R.C.S. must (1) complete five years of professional study after passing a recognized preliminary examination and a recognized pre-medical examination in chemistry and physics ; (2) comply with the regulations, which may be had from the Secretary, Examination Hall, Queen Square, London, W.C.1 ; and (3) pass the two professional examinations of which particulars appear below.

Regulations for the Conjoint Diplomas

The following is an outline of the present regulations for the L.R.C.P.Lond. and M.R.C.S.Eng. The full regulations and synopses and forms of certificate may be obtained from the Secretary.

Pre-Medical Examination

Students are required to pass a pre-medical examination in chemistry, physics, and elementary biology, conducted by the Conjoint Examining Board, before commencing the five years' curriculum of professional study, or some other examination recognized by the Board—namely, the examination in chemistry, physics, and biology for the degree in Medicine of any university recognized by the Board, the higher school certificates of Oxford and Cambridge Universities and the Oxford and Cambridge Schools Examination Board, the higher certificates of London, Bristol, Durham Universities, the Joint Matriculation Board of the Northern Universities, or the Central Welsh Board higher certificate.

A candidate must enter for chemistry and physics together, and he will not be allowed to pass in one without obtaining at the same time at least half the number of marks required to pass in the other subject. He will be admitted to the examination on producing evidence of having passed the required preliminary examination in general education.

The examination is partly written, partly oral, and partly practical. A candidate rejected in one or both subjects of the examination will not be admitted to re-examination until after the lapse of a period of not less than three months. Not more than two terms of professional study is recognized before the examination in elementary biology is passed.

Professional Examinations

There are two professional examinations, called the First and Final Examinations. The courses of study for the First Examination may be commenced before the pre-medical examination in biology or some equivalent examination has been passed provided three terms of study of anatomy and physiology are completed after passing such examination.

First Professional Examination.—The subjects of this are: Section I, (*a*) Anatomy, including histology and embryology ; (*b*) physiology, including biochemistry. Section II, Pharmacology and materia medica. A candidate must have attended at a recognized Medical School courses of instruction in anatomy, including embryology, during five terms, in the course of which he must have dissected the whole body ; courses of instruction in physiology, including biochemistry and biophysics, during five terms ; courses of instruction in pharmacology and materia medica. A candidate may present himself for the two sections together or separately, but he must take parts (*a*) and (*b*) of Section I together until he has passed in one or both parts, but a candidate will not be allowed to pass in one part unless he obtains at the same time at least half the number of marks required to pass in the other part. Section II of the examination may be passed at any time before the candidate enters for the Final Professional Examination, provided that the courses for admission to Section I have been completed. A candidate who produces satisfactory evidence of having passed an examination in the subjects of Section I or of either part of Section I and of Section II in the examination for the degree in Medicine conducted at a university recognized by the Board will be exempted from further examination in such subject or subjects.

Final Professional Examination.—The subjects of this are: Section I, Pathology (including morbid anatomy, morbid histology, and clinical pathology) and Bacteriology. Section II, Part I, Medicine, including medical anatomy, forensic medicine, and public health; Part II, Surgery, including surgical anatomy and the use of surgical appliances ; Part III, Midwifery and gynaecology. The examination is partly written, partly practical, partly clinical, and partly oral. A candidate may take Sections I and II and the three parts of Section II

of the Final Examination separately, or may take the whole examination together. He will be required to produce the certificates prescribed by the regulations before being admitted to the respective parts of the examination. No exemption is granted from any subject in the Final Examination.

FEES

The fee for the *Pre-Medical Examination* is four guineas, for re-examination in Chemistry two guineas, for re-examination in Physics one guinea, and for Biology one guinea. The fee for the *First Professional Examination* is ten guineas, for re-examination after rejection in Section I six guineas, for re-examination after rejection in either part of Section I three guineas, for re-examination after rejection in Section II three guineas. The fee for admission to Section I of the *Final Professional Examination* is four guineas; for admission to Section II, Part I, ten guineas; Part II, ten guineas; Part III, six guineas; and the re-examination fees are respectively three guineas, six guineas, six guineas, and five guineas.

ROYAL COLLEGE OF PHYSICIANS OF LONDON

This College has three grades—its Licentiates, its Members, and its Fellows. The Licence is now only issued through the Conjoint Board. The Membership (examinations for which are held in January, April, July, and October) is only granted to those who have obtained the Licence or to those who are graduates of a recognized university; in any case they must be persons over 23 years of age. Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce; they are also examined in Latin, Greek, French, and German. The languages are not compulsory, but credit is given to those who show a knowledge of them. The fee for the Membership is £42, or in the case of a Licentiate £21. There is a fee of £10 10s., payable before entrance to the examination, which in the case of successful candidates is reckoned as part of the Membership fee. The body of Fellows is maintained by election from among the Members.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

This College has two grades—Members and Fellows. The Members are admitted as stated in the section dealing with the Conjoint Board. The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations for the Fellowship—the first in anatomy and physiology, held in the months of June and December, which may be passed after the third winter session; the second held in the months of May and November, chiefly directed to surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of graduates in medicine and surgery of not less than four years' standing of universities recognized by the College for the purpose. All candidates are required to have held for six months a responsible post in charge of general surgical patients in the wards of a general hospital recognized by the Council.

Fees.—At First Examination, £8 8s.; for re-examination, £5 5s. At Second Examination, £12 12s. Admission fee £10 10s. for members, £31 10s. for non-members.

THE SOCIETY OF APOTHECARIES OF LONDON

This Society confers a registrable diploma in medicine, surgery, and midwifery, now known as the L.M.S.S.A. (Licentiate in Medicine and Surgery of the Society of Apothecaries), on those successful at the following examinations:

Pre-medical Examination.—Chemistry and physics, and elementary biology.

Primary Examination.—This includes anatomy, physiology and histology, written, oral, and practical, and materia medica and pharmacy, written and oral. Candidates referred will be required to produce evidence of further study before being admitted to re-examination. Candidates will be excused any or all the subjects of the Pre-medical and Primary Examination on producing evidence that they have passed the equivalent examinations before an examining body recognized by the Society.

Final Examination.—This is divided into four sections: A, Principles and practice of surgery, including surgical pathology, surgical anatomy, operative manipulation, instruments and appliances; B, Principles and practice of medicine (including therapeutics, pharmacology, and prescriptions), general and medical pathology, bacteriology, and morbid histology; C, Midwifery, gynaecology, diseases of newborn children, obstetric instruments and appliances; D, Forensic medicine, hygiene, theory and practice of vaccination, and mental diseases. A, B, and C are written, oral, and clinical. D is written and oral. A, B, C, and D may be taken at separate examinations, but there is no exemption from any subject of the Final Examination. Candidates referred in A, B, or C will be required to produce evidence of further study before re-examination.

All candidates making their first entry for the Final Examination after January 1st, 1935, will be required to pass the present Section D (forensic medicine, hygiene, and mental diseases) with Section B (medicine, general pathology, and bacteriology). The sections which may be taken separately will therefore be: A (surgery), B and D (medicine, etc.) C (midwifery). The form and scope of the examination will otherwise be unchanged.

The fee for the Pre-medical Examination is £5 5s.; for the Primary and Final, £21. The regulations and synopses relating to the several examinations, and other information, may be obtained from the Registrar, the Society of Apothecaries, Water Lane, Queen Victoria Street, E.C.4.

Mastery of Midwifery

The Society has recently instituted a Mastery of Midwifery, and issues a diploma under this title denoting the possession of specialized knowledge of ante-natal care, midwifery, and child welfare. The examinations take place in May and November, and candidates are required to submit certificates, etc., twenty-one days before date of examination. A severe test has been imposed so as to ensure a high standard of professional knowledge, but the diploma is not registrable under the Medical Acts. Admission is open to all who have been for not less than three years in possession of a registrable medical qualification, and who have had certain prescribed experience at recognized institutions concerned with obstetrics, ante-natal work, and child welfare work. Medical officers employed by a public health authority, and having special duties connected with maternity and child welfare, are admitted to the examination on production of evidence to that effect. The entrance fee for the examination is £10 10s., and a further fee of £10 10s. is payable by successful candidates before admission to the Mastery. Copies of the regulations may be obtained from the Registrar at the address given in the preceding paragraph.

British College of Obstetricians and Gynaecologists

The British College of Obstetricians and Gynaecologists was founded and incorporated in September, 1929. The objects of the College are set forth in the Memorandum of Association. The first and most important object is "to encourage the study and practice of obstetrics and gynaecology, subjects which should be inseparably interwoven." The College consists of Fellows and Members. It also has power to grant diplomas and certificates in obstetrics and gynaecology, either alone or in co-operation with teaching and/or examining bodies authorized to grant such diplomas. Candidates for the Membership of the College have to show evidence of having held resident appointments in general medicine or surgery, as well as in obstetrics and gynaecology, before

entering for the examination. The Fellowship of the College is granted to those Members who are judged by the College to have advanced the science and art of obstetrics and gynaecology. The Fellowship and Membership of the College include practically every teacher of obstetrics and gynaecology in Great Britain, and many distinguished exponents in the British Dominions. The Fellowship or Membership of the College is now a necessary qualification for election to the staff of several obstetric and gynaecological hospitals, and it is hoped that in time it will be regarded as essential for election to the staff of such hospitals. Consequently, all intending to specialize in these subjects should endeavour to obtain as soon as possible the Membership, the conditions and regulations of which may be obtained from the honorary secretary. The president is Dr. J. S. Fairbairn, the treasurer Mr. Eardley L. Holland, and the honorary secretary Professor W. Fletcher Shaw.

After long consideration, and as the result of over three years' experience gained by its Examination Committee, the College, recognizing that the present training of students in obstetrics is insufficient to fit them for responsible work in maternity services, has decided to award a diploma (D.C.O.G.) to registered medical practitioners who have had special post-graduate training and experience in the subject and satisfy the examiners appointed by the College. The membership of the College, being intended for those aspiring to special practice in obstetrics and gynaecology, demands a larger and wider experience than is possible for those entering family practice. Many candidates for the membership have had to be rejected because they had insufficient training and experience, and for most of these candidates it is impossible, at the stage of their career which they have reached, to undergo further training and to hold further resident posts. Many of them will be suitable candidates for the diploma. A special regulation has been made for candidates whose names have been on the *Medical Register*, and who have been engaged in practice for at least ten years. Copies of the prospectus and regulations for the membership and diploma may be obtained from the secretary of the College, 58, Queen Anne Street, W.1.

Scotland

THE UNIVERSITIES

There are in Scotland four universities, each possessing a Faculty of Medicine, and having the right to confer degrees which admit the holder to the *Medical Register*. In essential points the regulations in their medical faculties for undergraduates are much alike, so that a general account can be given of all of them together.

The universities are those of St. Andrews, Glasgow, Aberdeen, and Edinburgh. The provision each of the cities in which these universities are situated makes for the education of medical students will be found in the section on Medical Schools in Scotland; here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed a high repute.

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.). The two former are not obtainable one apart from the other. Besides these degrees a diploma in tropical medicine and hygiene is obtainable from the University of Edinburgh, as also diplomas in psychiatry and radiology. As for public health, registrable degrees and diplomas in this subject are granted by the University of Glasgow, while diplomas in public health may be obtained from the Universities of Edinburgh, St. Andrews, and Aberdeen.

The conditions for admission of graduating students of medicine are the same as those in the Faculties of Arts or Science. Prospective medical students are also required to pass a pre-registration examination in chemistry and physics. This is not enforced at Aberdeen or St. Andrews.

Professional Education

The regulations comply in all respects with the requirements and recommendations of the General Medical Council, and, in addition, necessitate definite study for stated periods of diseases of children, of the larynx, ear, and nose, of the skin, of ophthalmology, and of mental diseases. In respect of the various courses certificates must be obtained showing that the student has not only attended regularly, but has duly performed the work of the class. Out of the necessary five years of medical study not less than three (or in certain circumstances two) must be spent at the university whose degrees the student hopes to obtain, and the balance at any place officially recognized for such purpose. In each academic year there are two sessions—one lasting from the beginning of October to the middle of March, and the other from the middle of April to the beginning of July.

Professional Examinations

The distinctive feature of the Scottish curriculum is that though nominally there are only four examinations, each of these may be, and habitually is, split up by the student into sections. Hence, a student may complete some stage of his career during the course of nearly every session. Thus, by the end of the first winter session the student may pass in zoology* and chemistry.† At the end of the first summer session he can finish with botany* and physics,† and with anatomy and physiology at the end of the second. Pathology and materia medica he may pass at the end of the third year, and so on, until the final examination in midwifery, surgery, and medicine, and the corresponding clinical subjects, at the end of the fifth year of study. At each examination the candidate may pass "with much distinction" or "with distinction," and a record is kept of the merit displayed, so that when the time comes for the candidate to graduate, one who has done well throughout can be declared as graduating with honours. A further point in the system is that the student's own teachers commonly take some part in his examination.

Of the four examinations, the first deals with physics, botany, zoology, and chemistry; the second with anatomy and physiology; the third with materia medica and pathology; the fourth with medicine and surgery (clinical and systematic), midwifery, clinical midwifery and clinical gynaecology, and forensic medicine and public health. At Edinburgh the first two examinations are held three times a year; the third and final twice a year. At St. Andrews all four examinations are held twice a year, and at Glasgow the first two are held twice a year and the third three times. At Aberdeen, degree examinations in all subjects are held twice a year.

Exemption from the first professional examination may be obtained by candidates who have passed an arts, science, or medical degree examination in its subjects at any recognized university.‡

The Higher Degrees

It is open to those who are already M.B., Ch.B. to proceed either to the M.D. or the Ch.M. A candidate for the former must have been engaged for not less than one year in work in the medical wards of a hospital, or in scientific research in a recognized laboratory, or in the Naval or Military Medical Service, or have been at least

* At St. Andrews University botany and zoology may be taken at the end of the first winter term, physics and chemistry at the end of the first year.

† In the case of Glasgow these subjects—chemistry and physics—are transposed.

‡ This does not apply to the University of Aberdeen, where the course in physics includes special instruction on the medical aspects of the subject. Accordingly every student, irrespective of whether he holds an arts or science pass in physics, must take medical physics.

two years in general practice, and he must be 24 years of age. He has to write a thesis on any subject not exclusively surgical, and is examined in clinical medicine and (*or*, in the case of Glasgow, St. Andrews, and Aberdeen) in some one or other of its special departments. The regulations for candidates for the Ch.M. are of a corresponding character, a period of surgical work in a hospital or elsewhere being substituted for medical work, and the thesis being on a surgical rather than a medical subject. He is examined in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery.

FEES

It is estimated that the class, examination, and other fees for the M.B., Ch.B. come altogether to about £265, the separate examination fees included in this calculation being as follows:

	£	s.	d.
First Professional	9	9	0
Second Professional	7	7	0
Third Professional	6	6	0
Final	11	11	0

Re-entry in any subject in which the candidate has failed entails a fresh payment of £1 1s. Candidates for the M.D. and Ch.M. pay £21, and on re-entry £5 5s.

More detailed information with regard to the University of Edinburgh can be obtained from the *Medical Programme*, price 6d., which is published by Mr. Thin, 55, South Bridge, Edinburgh, or on application to the Dean of the Faculty of Medicine. Similar information about Glasgow should be sought from the Assistant Clerk, Matriculation Office, Glasgow. With regard to Aberdeen, application should be made to the Secretary of the University of Aberdeen. In respect of St. Andrews, information can be obtained either from the Secretary of the University, or, alternatively, the Secretary of the United College, St. Andrews, or the Secretary of University College, Dundee, these being the two constituent colleges of the University of St. Andrews.

Finally, it should be mentioned that in connexion with all the Scottish universities there are valuable bursaries and scholarships, some information as to which will be found in the article on Medical Schools.

The Carnegie Trust

The following is a summary of the regulations made by the Carnegie Trust for the Universities of Scotland for assistance in the payment of class fees in the universities and extra-mural colleges of Scotland.

Applicants must be over 16 years of age; they must be of Scottish birth or extraction, or have attended for two years, after the age of 14, at a school or institution under inspection of the Scottish Education Department. Applicants so qualified who have been pupils of schools under the Scottish Education Department will be eligible for assistance in the payment of class fees if they have obtained the leaving certificate of the Department with a minimum of three higher grade passes, provided that it bears evidence of such preliminary education as is required by the universities for their graduating curricula, or that it has been supplemented by such passes either in the Scottish Universities Preliminary or other examination as will satisfy the above requirement of the universities. Where applicants have not been pupils of schools under the Scottish Education Department, or where other good ground for not having obtained the leaving certificate can be shown, the Executive Committee has power to accept instead what it deems equivalent evidence of attainments provided that applicants will not be considered eligible who have not obtained three higher grade passes or who require to pass any further preliminary examination before they can complete their graduating curricula. No applicant in medicine is eligible for assistance until pre-registration subjects have been passed at any centre where pre-registration examinations are required.

Applicants in the Faculties of Arts and Science must have had their course of study for each academic year approved by the University Adviser of Studies, and all applicants must have passed the graduation examinations belonging to the previous stage of their curriculum before becoming eligible for assistance in the payment of fees of classes belonging to a further stage. Beneficiaries must submit to the Executive Committee at the end of each session particulars as to their attendance and work, any distinctions gained, and any graduation examinations passed.

The annual allowance towards payment of class fees offered to beneficiaries by the Trust in the Faculty of Medicine is £20 for four years, in all £80. Any unexpended part of a grant will be carried forward to the succeeding year. In combinations of Faculties the allowances available for beneficiaries are: Arts and Medicine—two Arts grants of £9 and four Medicine grants of £20, in all £98; Science and Medicine—two Science grants of £18 and four Medicine grants of £20, in all £116.

Applicants, in writing for application forms (Carnegie Trust, Merchants' Hall, 22, Hanover Street, Edinburgh) must name the university and faculty in which they intend to study, and state whether they have previously obtained the benefits of the Trust. Applications must be lodged not later than October 25th for the winter session, or May 10th for the summer session. Payments are made by means of fee coupons, and fees already paid are not refunded.

THE SCOTTISH CORPORATIONS

There are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Their licences can be separately obtained only by persons who are already in possession of a recognized qualification—in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow. All others must submit to the examinations held by the Conjoint Board, which the three corporations have combined to form. Details concerning this Board and its component Colleges follow. The conditions on which their higher qualifications are granted will be found set forth separately in connexion with each corporation.

THE CONJOINT BOARD IN SCOTLAND

This body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those finally approved by it are entitled to registration and to the initials denoting the Licences of the three bodies concerned—namely, L.R.C.P.Ed., L.R.C.S.Ed., and L.R.F.P.S.Glas. The Board requires all candidates to comply with the regulations of the General Medical Council. It has an arts examination of its own, but is prepared to accept in its place any of the other educational tests approved by the General Medical Council. All candidates must obtain registration with the General Medical Council.

Professional Curriculum for Candidates registered as Medical Students after October 1st, 1930

Subsequent to registration as a medical student the candidate must pass not less than five years in medical study, each comprising a winter and a summer session. The Board does not insist that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held four times every year, and these will fall to be held three times in Edinburgh and once in Glasgow during the next period; it is open to candidates to present themselves for examination at either place. The first examination deals with general biology (systematic and practical), and physics and chemistry (systematic and practical); the second with anatomy, embryology, physiology, biochemistry and biophysics; the third with pathology (including bacteriology and morbid anatomy) and pharmacology (theoretical and practical); and the final with (1) medicine, including therapeutics, applied anatomy and physiology, and clinical pathology, with practical medicine; (2) surgery, including applied anatomy and physiology, clinical

pathology, and practical surgery; (3) midwifery and diseases of women, clinical obstetrics and gynaecology, with practical midwifery; and (4) medical jurisprudence and public health. All candidates for the Final Examination must complete portions (1) (2) and (3); which must be taken together, within a period of nineteen months.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of their subjects. He can present himself in any single subject of the first three examinations. As regards the Final Examination, a candidate can present himself in medical jurisprudence and hygiene at any time after completion of the third examination and of his study of these subjects; but in medicine, surgery, and midwifery he cannot present himself until the completion of five years' study, and he must take them all simultaneously. A candidate who takes up several subjects of an examination or the whole of the subjects at one time, but fails in some of them, is credited at the next examination with those subjects in which he has been approved.

Part or entire exemption from the first three examinations may be granted to those who have already passed before other bodies examinations deemed by the Board equivalent to its own, but all candidates for the Conjoint Licence must sit for the Final Examination, and at no examination can a candidate present himself within three months of his rejection by some other licensing body.

FEES

It is estimated that the total cost of lectures and fees for the Conjoint Licence is about £170. The separate examination fees are as follows: First, Second, and Third Professional, £5 each; Final £15. On re-entry for any of the first three examinations £3, and on re-entry for the Final, £5. If the re-entry is only in one or two subjects of the First, Second, or Third Examination the fees are smaller.

Information concerning this Board should be sought either from Mr. David Thomson, Solicitor, 18, Nicolson Street, Edinburgh, or from Mr. David Willox, Faculty Hall, 242, St. Vincent Street, Glasgow.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

This College has three grades—Licentiateship, Membership, and Fellowship—all of which are open to men and women. The regulations applying to candidates for the Licentiateship have already been generally indicated. If desirous of receiving it apart from those of the other two corporations, they must be duly registered medical practitioners. Candidates will be required to pass an examination corresponding to the medical part of the Final Examination of the Conjoint Board, and conditioned in the same way, and also an examination in materia medica. The fee for examination is 15 guineas, a special examination being obtainable on due cause being shown, and on payment of 5 guineas extra. Ordinary examinations take place monthly on the first Wednesday and Thursday, except in September and October.

Candidates for the Membership must be either Licentiates of a British or Irish College of Physicians, or alternatively graduates of medicine of a university approved by the Council, and in either case not less than 24 years of age. Candidates are examined in medicine and therapeutics, also on one or more departments of medicine specially professed, and approved by the Council, in which a high standard of proficiency will be expected. The fee to be paid by a candidate for the Membership is £36 15s. The examination is held quarterly, on the second Tuesday and following days of the months of January, April, July, and October, and application for admission to it must be made a month previous to the date at which it is proposed to appear.

For the Fellowship the candidate must have been a Member of the College for at least three years, and, if accepted, pay fees, including £25 stamp duty, amounting altogether to £64 18s. Further details can be obtained on application to the Secretary of the College.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH

This College has two grades—its Licence and its Fellowship. Licentiates may be of either sex, and for the Fellowship women are eligible also.

Licence

As an original qualification the Licence is only granted after fulfilment of the regulations of the Scottish Conjoint Board, but as an additional qualification it can be obtained by those already possessed of a registrable or equivalent qualification in medicine. In this case the candidate has to pass a written, oral, and clinical examination in surgery and surgical anatomy, and may be asked to operate on the dead body.

The fee is £15 15s., of which £10 10s. is returned to unsuccessful candidates. On due cause being shown, a special examination may be granted, the fee being £20, of which £10 is returned to a candidate if he is not approved.

Fellowship

Candidates for the Fellowship must be not less than 25 years of age, and have been in the practice or study of their profession subsequent to qualification for at least two years, and must hold either a surgical degree from a university recognized for that purpose by the College, or a registrable diploma obtained as the result of an examination which includes surgery as well as medicine and midwifery. Candidates are examined in (*a*) the principles and practice of surgery, including surgical anatomy, (*b*) clinical surgery, and (*c*) one optional subject, which they may choose from among the following: surgical pathology and operative surgery, ophthalmology, laryngology, otology and rhinology, gynaecology, obstetric surgery, anatomy, and dental surgery and pathology. The examination is written, oral, and clinical or practical. A candidate who desires to be examined must give one month's notice. After having passed the examination he must lodge with the Clerk to the College a petition asking that his name be placed before the College for election as a Fellow. This petition must be signed by two Fellows, as proposer and seconder, who should be sufficiently acquainted with the candidate to vouch that he is in every way a suitable candidate for the Fellowship. Examinations are held four times a year—January, March, July, and September. It is desirable that either the proposer or the seconder should be resident in Edinburgh. Candidates are not allowed to appear more than three times at the examinations unless by express permission of the President's Council.

The admission fee is £20, and after passing the examination the candidate shall pay the sum of £30 to the College funds. In the case of Licentiates of the College £10 thereof shall be remitted in consideration of the fees they have already paid. For further information application should be made to the Clerk of the College, Mr. David Thomson, Solicitor, Surgeons' Hall, 18, Nicolson Street, Edinburgh, from whom a copy of the *Laws Relating to the Fellowship by Examination* may be obtained.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW

This body possesses two classes—Licentiates and Fellows. The regulations applying to the former correspond with those respecting candidates for the Licence of the Royal College of Surgeons of Edinburgh. Candidates for the single Licence are examined in surgery (including clinical surgery and surgical anatomy). The fee is £15 15s., and examinations are held quarterly. Candidates for the Fellowship must be qualified medical men of not less than two years' standing and 24 years of age. Candidates approved at this examination are then eligible for election as Fellows. The Faculty can also elect three Fellows annually without previously submitting them to examination, provided they "have highly distinguished themselves in medical science or practice." They must be of not less than twenty years' standing and 45 years of age.

The fee for the Fellowship is £50. Further information can be obtained from Mr. David Willcox, Faculty Hall, 242, St. Vincent Street, Glasgow.

Ireland

MEDICAL REGISTRATION IN THE IRISH FREE STATE

The Medical Practitioners Act, 1927 (Irish Free State), provides for the establishment of a Medical Registration Council for the Irish Free State. The main functions of the Council are (1) to keep a register of medical practitioners who may desire to practise permanently or temporarily in the Irish Free State, and (2) to exercise disciplinary power with regard to all medical practitioners who are on the register and engaged in practice in the Irish Free State. The first schedule of the Act contains the agreement between Great Britain, the Irish Free State, and Northern Ireland. This agreement provides for the nomination of a member of the General Medical Council, formerly made for Ireland by His Majesty on the advice of the Privy Council, to be made henceforth by His Majesty in Council on the recommendation of the Governor of Northern Ireland. The nominations of members of the General Medical Council by universities and medical corporations in Ireland and the election of a member of the General Medical Council by registered medical practitioners in Ireland will be in all respects the same as heretofore. The constitution of the General Medical Council and of the several Branch Councils as formerly existing under the Medical Acts, and the powers of holding qualifying examinations and granting diplomas for the purpose of registration in the general *Register* formerly vested in certain universities and medical corporations in Ireland, are not affected by the establishment of the Irish Free State or of Northern Ireland, and for the purpose of the preparation and keeping of the general *Register* the General Medical Council and the Branch Council for Ireland have the same powers and jurisdictions under the Medical Acts as they exercised formerly. The agreement provides also that any person who is or shall be registered in the general *Register* shall be entitled on the payment of a prescribed fee to be registered in the *Irish Free State Register*, but this fee is not payable by any person who, on the date of the establishment of the *Irish Free State Medical Register*, is registered on the general *Register*. Then follow provisions with regard to the erasure from the *Register* of the name of a person on account of misconduct.

The *Irish Free State Medical Register* was established on May 26th, 1928, this being the date appointed by the Medical Registration Council. The *Register* on establishment contained the names of every medical practitioner who was registered in the general *Medical Register* immediately before May 26th, 1928, and who either was then resident in the Free State, according to his address as stated in the general *Register*, or was living outside the Free State and applied to the Council within one month before May 26th, 1928, to be registered. No fee for registration was charged in such cases.

For registration in the *Irish Free State Medical Register* subsequent to its establishment a fee is required, together with a prescribed form of application. A person is eligible for registration if he is at the time of application registered in the general *Medical Register*, or if he possesses the requisite qualifying diploma granted by colleges or bodies in the Free State as set out in the Act. Candidates for medical appointments made under the Appointments Commission must be registered in the *Irish Free State Medical Register*. Application for further information may be made to the Registrar, Medical Registration Council, Room 35, Upper Fitzwilliam Street, Dublin.

THE IRISH UNIVERSITIES

There are three universities in Ireland, each with a medical faculty. These are, in the Irish Free State, the University of Dublin (usually known as Trinity College, Dublin), and the National University of Ireland; and, in Northern Ireland, the Queen's University of Belfast.

UNIVERSITY OF DUBLIN: TRINITY COLLEGE

This university grants two degrees in medicine (M.B. and M.D.), two in surgery (B.Ch. and M.Ch.), two in midwifery (B.A.O. and M.A.O.), and a post-graduate diploma in public health. It also grants post-graduate diplomas in gynaecology and obstetrics, for which nine months' study is required, and in psychological medicine, for which twelve months' study is required. The degrees are granted to those who, having passed the professional examination, have also graduated in arts.

Professional Examinations

A candidate for the Final Examination for the M.B., B.Ch., and B.A.O. degrees must be a matriculated student of at least five years' standing. The examinations which students must pass are the Preliminary Scientific, the Intermediate Medical, and the Final. Before admission to any of these examinations students must have completed the courses of study in the subjects involved.

Preliminary Scientific. This covers (*a*) chemistry, (*b*) physics, (*c*) botany and zoology. The three divisions may be taken together or at different times.

Intermediate Medical.—This is divided into two parts: (*a*) anatomy, physiology, and histology; (*b*) applied anatomy and applied (clinical) physiology. The two parts may be taken separately or together.

Final Examination.—Part I: Pathology and bacteriology, materia medica and therapeutics. Part II: (*a*) Midwifery and gynaecology; (*b*) medicine, mental diseases, medical jurisprudence and hygiene; (*c*) surgery in all branches, including clinical ophthalmology. The three sections of Part II may be taken separately or together. In either case the full curriculum must have been completed, and the Final Examination cannot be completed before the end of the fifth year.

M.D.—The candidate must have passed all the qualifying examinations in medicine, surgery, and midwifery, and have taken, or have been qualified to take, the degree of B.A. three years previously. He must send in a thesis for approval. Subsequently the Regius Professor of Physic and an assessor will discuss with him questions connected with the thesis, and also examine him viva voce on other medical subjects of a more general nature.

M.Ch.—The candidate must be a B.Ch. of not less than three years' standing and must produce satisfactory evidence of having been engaged in practice for two years.

M.A.O.—The candidate must be a B.A.O. of not less than two years' standing and must produce satisfactory evidence of having been engaged for two years in the study of obstetric science. The examination is specially directed to obstetrics and practical gynaecology.

Further information regarding courses of instruction, etc., may be obtained from the Registrar of the School of Physic, Trinity College, Dublin.

QUEEN'S UNIVERSITY, BELFAST

The degrees granted by the Medical Faculty of this university are as follows: Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Master of Surgery (M.Ch.), Master of Obstetrics (M.A.O.). The university also confers a diploma in public health and a diploma in psychological medicine. The first three degrees mentioned serve as a qualification for admission to the *Medical Register*, and are not granted separately. In addition to matriculating and passing his

professional examinations, a candidate for these degrees must have passed three of the regulation five years as a student at the Belfast School of Medicine. Degrees in dental surgery (B.D.S. and M.D.S.) are conferred by the university, and also a diploma in dental surgery (L.D.S.).

Professional Examinations

The examinations for the M.B., B.Ch., B.A.O. are four in number. The first deals with: (1) inorganic, organic, and practical chemistry, (2) experimental and practical physics, (3) botany and practical botany, (4) zoology and practical zoology. It is divided into two parts, of which botany and zoology form one. The Second Examination covers anatomy and physiology (both theoretical and practical), and may be taken at the end of the second year of the student's career. The Third Examination includes: (1) pathology and practical pathology, (2) materia medica, pharmacology, and therapeutics, (3) medical jurisprudence, and (4) hygiene. Candidates who have passed the Second Examination may present themselves for Part I of the Third (Nos. 1 and 2) at the close of the third year, and for Part II (Nos. 3 and 4) at the end of the winter session of the fourth year.

The Final Examination includes: (1) medicine, (2) surgery, (3) midwifery, (4) ophthalmology and otology. The student must pass in all subjects at once at the end of his fifth year. No certificate in regard to the study of the subjects of this examination will be valid unless the work was done subsequent to passing in all the subjects of the Second Examination.

The Higher Degrees

Candidates for the degree of Doctor of Medicine must be graduates in medicine of at least three years' standing, unless they hold also a degree of the university in arts or science, in which case a standing of two academic years will suffice. Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed. The degree may be conferred either (*a*) after a formal examination, or (*b*) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject. When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of medicine, (2) a commentary on a selected clinical case, (3) a clinical and viva voce examination, and (4) a written paper and clinical or practical and viva voce examination on a subject chosen from the following list: (*a*) human anatomy, including embryology; (*b*) physiology, (*c*) pathology, (*d*) pharmacology and therapeutics, (*e*) sanitary science and public health, (*f*) forensic medicine and toxicology, (*g*) mental diseases, (*h*) infant hygiene and diseases of children, (*i*) midwifery and infant hygiene. The regulations for the degrees of M.Ch. and M.A.O. are of the same general nature.

NATIONAL UNIVERSITY OF IRELAND

The National University of Ireland carries on most of its medical educational work through three constituent colleges—University College, Dublin; University College, Cork; and University College, Galway. Each of these provides a full medical curriculum, and all candidates for the medical degrees of the university must pass three of their five years of study at one or other of them. These years do not count except after matriculation in the Medical Faculty. The candidates at each constituent college are examined by the university, and a common standard of education is secured by all courses of instruction and the regulations concerning them having to be approved by the Senate, after considering report thereon from the General Board of Studies of the university. In addition to the ordinary degrees in Medicine and Surgery, the university grants those of Bachelor and Master of Obstetrics, Bachelor and Doctor of Science in Public Health, and Bachelor and Master in Dental Surgery, as well as Diplomas in Public Health and in Psychological Medicine.

Application for other information may be made to the Registrar, National University of Ireland, 49, Merrion Square, Dublin, C.17.

THE IRISH CORPORATIONS

There are, in the Irish Free State, three licensing bodies other than the Medical Faculties of the universities; and in Dublin, just as in London, there is a Royal College of Physicians of Ireland, a Royal College of Surgeons in Ireland, and an Apothecaries' Hall. In Dublin, as in London and in Edinburgh, the two Colleges have formed an examining Conjoint Board, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall of Ireland, like the Apothecaries' Society of London, gives its licence separately.

THE CONJOINT BOARD IN IRELAND

This body requires of candidates either the passage of its own preliminary examination in the subject of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council as well as passing in the pre-registration examinations in chemistry and physics and biology.

Professional Examinations

There are three professional examinations, the first of which cannot be passed earlier than the end of the second winter session, nor the final before the conclusion of full five years of medical study. Before being admitted to any of them the candidate must show that he has studied the different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The First Examination deals with Part I—(*a*) biology, (*b*) applied chemistry and physics. Part II—anatomy, including embryology; physiology, including physiological chemistry and histology. The Second Examination deals with (*a*) pathology, including morbid anatomy, clinical pathology, and bacteriology; (*b*) materia medica, pharmacy, and therapeutics; (*c*) forensic medicine, hygiene, and public health; (*d*) ophthalmology and aural surgery; and may be taken separately.

Final Examination.—This is divided into three divisions, which cannot be completed until at least five years have passed in medical studies other than those for the pre-registration examinations, and five years at least since the beginning of the curriculum. The divisions are: (*a*) medicine, including fevers, mental diseases, and diseases of children; (*b*) surgery, including operative surgery; (*c*) midwifery, including diseases of women and newborn children, and the theory and practice of vaccination.

Fees.—Preliminary Examination, £2 2s. Re-examination, £2 2s. Pre-Registration Examination, £3 3s. Re-examination in Chemistry, £2 2s.; in Physics, £1 1s. First Professional Examination—Part I, £17 17s.; Part II, £10 10s.; Second, £9 9s.; Final, £6 6s. Re-examination fee is £2 2s. for each division.

Diploma in Psychological Medicine

There are two examinations in connexion with this diploma: Part I consists of (*a*) anatomy and physiology of the nervous system, (*b*) psychology. Part II—(*a*) neurology, including clinical and pathological neurology; (*b*) psychiatry, or psychological medicine, including its legal relationships. Fees, £6 6s. for each part.

Further information can be obtained from Mr. Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, St. Stephen's Green, Dublin.

Royal College of Physicians of Ireland and Royal College of Surgeons in Ireland

The Diploma in Public Health

Every candidate for the Diploma in Public Health must observe the following rules:

1. Not less than two years shall elapse between the attainment by a candidate of a registrable qualification in medicine, surgery, and midwifery and his admission to the final examination for a diploma or degree in sanitary science, public health, or State medicine. (The purpose of Rule 1 is to provide opportunity for candidates while passing from the state of pupilage to that of responsible practice, to give mature consideration to the obligations and duties involved in the work of the Public Health Service, and to acquire direct experience of medical work in a responsible capacity, in general medical practice, in hospital or laboratory appointments, or in any special branch of clinical work or study related to State medicine.)

2. The curriculum for a diploma or degree in sanitary science, public health, or State medicine shall extend over a period of not less than twelve calendar months (or an academic year of whole-time study covering a period of not less than nine calendar months) subsequent to the attainment of a registrable qualification.

3. Every candidate shall produce evidence of having attended, during not less than 280 hours, at an institution approved by the licensing body granting the diploma or degree practical instruction in: (*a*) bacteriology and parasitology (including immunology, serology, medical entomology, etc.), especially in their relation to diseases of man, and to those diseases of the lower animals which are transmissible to man; (*b*) chemistry, physics, radiology and electrology in relation to public health; (*c*) physiology and biochemistry in their application to nutrition and hygiene; (*d*) meteorology and climatology in relation to public health.

4. Every candidate shall produce evidence of having received, during not less than 120 hours, at an institution approved by the licensing body granting the diploma or degree, instruction in: (*a*) the principles of public health and sanitation; (*b*) epidemiology and vital statistics; (*c*) sanitary law and administration (including public medical services); (*d*) sanitary construction and planning.

5. Every candidate shall produce evidence that he has attended for three months on the clinical practice of a recognized hospital for infectious diseases, and has received therein instruction in the methods of administration. At least twenty-four daily attendances of not less than two hours each shall be required.

6. Every candidate shall produce evidence that he has, during a period of not less than six months, been engaged in acquiring a practical knowledge of the duties, routine and special, of public health administration under the supervision of a medical officer of health, who shall certify that the candidate has received, from this officer or other competent medical officer during not less than three hours on each of sixty working days practical instruction in these duties, and also those relating to: (*a*) maternity and child welfare service; (*b*) health service for children of school age; (*c*) venereal diseases service; (*d*) tuberculosis service; (*e*) industrial hygiene; (*f*) inspection and control of food, including meat and milk. (Instruction in (*a*) to (*f*) should include attendance at the centres, clinics, institutions, and premises concerned.) Certificates of having received the prescribed instruction in public health administration must be given by a medical officer of health who devotes his whole time to public health work; or by the M.O.H. of a sanitary area having a population of not less than 50,000; or in Ireland the medical superintendent officer of health of a county or county borough having a population of not less than 50,000.

7. The examination for the diploma or degree shall be divided into two parts, Part I and Part II, each of which shall extend over not less than two days, and shall be conducted by examiners specially qualified. A candidate must pass in all the subjects of Part I before being admitted to examination for Part II. In Part I, and also in Part II, a candidate must pass in all the specified subjects at one time.

8. The examination for Part I shall be practical, written, and oral, and shall include the subjects referred to in Rule 3. Candidates may not be admitted to examination for Part I until after they have completed the prescribed courses of instruction in the subjects thereof.

9. The examination for Part II shall include the subjects referred to in Rules 4, 5, and 6. The examination shall be written and oral, and shall include practical examinations in infectious diseases; food inspection; inspection of premises—dwellings, factories, workshops, schools, etc. Candidates may not be admitted to examination for Part II until after they have completed the prescribed courses of instruction in the subjects thereof. No candidate shall be admitted to Part II of the examination for a registrable diploma or degree in public health until after the lapse of not less than two years from the date of his obtaining a registrable qualification in medicine, surgery, and midwifery, which qualification must be registered in the *Medical Register* before admission to Part II.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

Those whose names already appear on the *Medical Register* can obtain the separate Licence in Medicine of this College and its Licence in Midwifery. In either case an examination has to be passed in the subjects indicated, questions on midwifery, hygiene, and jurisprudence being included in the examination for the Licence in Medicine. For the Licence in Midwifery practitioners of over five years' standing are exempted from examination by printed questions. The other grades of the College are Members and Fellows. The former are admitted after an examination which is open to graduates in medicine of recognized universities whose names are on the *Medical Register* of the United Kingdom or the Irish Free State, and Licentiates in medicine of the Royal Colleges of Physicians. The examination deals with the general subjects of medicine. Fellows are selected, by vote, from among the Members of the College.

Fees.—For the Licence in Medicine, 15 guineas; Special Examination, £21. For the Licence in Midwifery, 8 guineas; Special Examination, 16 guineas. For the Membership, 20 guineas to a Licentiate of the College, 35 guineas to others; a special examination costs 10 guineas extra. The Fellowship, £35, in addition to stamp duty, £25.

Information as to special examinations and other matters can be obtained from the Registrar, the Royal College of Physicians, Kildare Street, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND

This body, besides granting a Licence in Surgery, admits those possessed of registrable surgical qualifications to its Fellowship under certain conditions. Its Licence is usually granted conjointly with that of the Royal College of Physicians, but it is given separately to holders of a registrable qualification in medicine, provided the College is satisfied that adequate courses of study have been pursued, and provided its own provisional examination is passed. This examination is held on its behalf by the Conjoint Board, and is identical with the ordinary surgical portion of the examinations imposed by that body.

The Fellowship.—Candidates for the Fellowship must pass two examinations, of which the first is in anatomy (including dissections), physiology, and histology; and the second in surgery (including surgical anatomy) and pathology. Both examinations are partly written, partly practical, and partly viva voce; while the Final Examination includes the performance of operations. All subjects of either examination must be passed at one time, and in neither can a candidate be admitted who has been rejected in any of its subjects by any other licensing body within three months. Candidates are not admitted to the Primary Examination except on evidence that they have already passed an examination in anatomy, physiology, and histology, held by some university or other body whose degrees or licences entitle the holder to admission to the *Medical Register*; if, however, the candidate's name is on the Colonial or Foreign List in the *Medical Register*, at the discretion of the Council. Candidates for the Final Examination must be over 25 years of age, produce a certificate of general good conduct signed by two or more Fellows of the College, and, if successful, must make a declaration before admission to the effect that they do not conduct dispensing practices, and will not do so as long as they are Fellows.

Fees.—Candidates for the Fellowship pay 5 guineas for each examination, the total of 10 guineas being reckoned as part of the fee payable on admission to the Fellowship. That fee is 25 guineas in the case of those who are already Licentiates, and 40 guineas in the case of others.

APOTHECARIES' HALL OF IRELAND

A diploma is granted by this Hall which entitles the holder to be registered as a practitioner of medicine, surgery, and midwifery, and confers also the privileges of an apothecary. Women candidates are eligible.

Fees.—First and Second Professional Examinations, £21; Final Examination, £21. Subjects of examination: First Professional, Anatomy and Physiology. Second Professional, Materia Medica and Pharmacy; Medical Jurisprudence and Hygiene; Pathology. Final Examination: Medicine; Surgery, and Midwifery. Candidates must enter for and pass at the one time in Anatomy and Physiology. They are at liberty to enter for the subjects of the Final Examination at separate

times, but the Final Examination cannot be completed until a period of three years has elapsed from the date of passing First Professional Examination.

Application for other information should be made to the Registrar, 95, Merrion Square, Dublin.

Medical Schools and Colleges

LONDON

Information as to the fees at each of the various metropolitan medical schools, and the scholarships, prizes, and junior appointments which they offer, will be found in the following pages. The courses they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the English Conjoint Board or the Apothecaries' Society, not less than of those who have London or other university degrees in view. At all, too, special facilities are offered to students who have commenced their professional education at Oxford or Cambridge, and are seeking the medical degrees of those universities.

Charing Cross Hospital

Centenary Year

The School, which was formally opened in October, 1834, is this year celebrating its centenary by the issue of a public appeal for funds. One of the principal objects of the appeal is for the provision of a students' hostel. The inaugural ceremony will be held in the autumn, and details will be furnished to applicants.

Situated in the centre of London, Charing Cross Hospital Medical School is the most easily accessible of all the London schools. Instruction is given in all the subjects for the final examinations of the universities of London, Oxford, and Cambridge, the Conjoint Board, and other licensing bodies. In addition to the clinical appointments held by every student, courses of systematic lectures, demonstrations, and tutorial classes are held in all subjects of the curriculum. In the School there are departments devoted to bacteriology, clinical pathology, biochemistry, materia medica, public health, operative surgery, as well as laboratories for research. By reason of the abundance and variety of the material available for investigation, the Institute of Pathology, with its whole-time staff of scientific workers and its completely equipped laboratories, offers peculiar advantages to students in this branch of medicine. The Library has ample accommodation, and contains nearly 4,000 volumes, including modern textbooks and contemporary reviews. The Pathological Museum is organized in two sections: one devoted to specimens illustrating general pathological conditions; the other consisting of the Lockyer Collection, the finest collection of gynaecological and obstetrical specimens in the country.

The hospital contains 300 beds. The opening of the new Nurses' Home at Hampstead has released in the hospital considerable accommodation which is shortly to be converted into wards for paying patients, thereby increasing the number of beds to about 360. There are special departments for diseases of ear, nose and throat, the eye, the skin, for children, for mental disorders, for orthopaedic surgery and massage, for *x*-ray, electrical and light treatment, for dental surgery, and for tuberculous and diabetic cases. A number of beds are set apart for diseases peculiar to women and for midwifery cases, and the hospital serves an extensive and thickly populated district in gynaecological and obstetric work. The out-patient department dealt with 30,196 new cases last year, with 135,705 attendances. In-patients numbered 5,244.

The Students' Club provides for the athletic, recreational, and social life of the students by means of an 8-acre sports ground, with facilities for football, cricket, hockey, and tennis, by common rooms, restaurant, etc., and by sections of the club designed for a particular purpose, such as the debating society and the dramatic society.

Appointments.—The number of resident appointments as compared with the number of students in the School is exceptionally large, and students of reasonable ability and industry can usually be certain of obtaining one or more. The resident appointments to which election is made every six months number 14 (28 every year). During the time an appointment is held the officer receives a salary, varying with the post from £50 to £200 p.a., and is provided with free board and accommodation in the Residency of the hospital. In addition to the foregoing, two non-resident officers and a number of clinical assistants are appointed annually. Higher Appointments.—Annual election is made to the posts of resident medical officer (£400), resident casualty officer (£200), medical registrar (£150), surgical registrars (two, £150 each), obstetric registrar (£100), and registrar to the ear, nose, and throat departments (£100). The holders of these posts are eligible for election for a second year. Every student during the course of his clinical studies serves the offices of medical clerk, surgical dresser, and clerk and dresser to all the special departments.

Scholarships.—The following are offered annually: (*a*) For students commencing medical studies, two scholarships, each of the value of £50. (*b*) For students commencing clinical studies, two University Scholarships, each of the value of £120, in pathology; one University Scholarship, value £120; and one Open Scholarship, value £75, in anatomy and physiology. An "Epsom College" Scholarship (£100) is awarded periodically on the nomination of the Head Master, and a "Cranleigh" Scholarship on similar conditions. In addition there are a number of exhibitions.

Prizes.—(1) The Llewellyn Prize, £25, for highest distinction throughout final course of studies (2) Williams Travers Prize, £15, midwifery and gynaecology. (3) Pereira Prize, £4 4s., clinical commentary. (4) T. H. Green Prize, £5 5s., clinical commentary. (5) Clinical Surgery Prize, £3 3s. (6) Clinical Medicine Prize, £3 3s. (7) John H. Morgan Prize, £10. (8) Steadman Prize in Pathology. (9) The Governors Clinical Gold Medal. (10) Class Prizes of £2 2s. each in Pathology and Bacteriology; Hygiene and Public Health; Ophthalmology, Oto-laryngology; Psychological Medicine; Midwifery; Practical Midwifery; Gynaecology, and Pharmacology and Therapeutics.

Fees.—The fees are as follows: Entrance for the whole course including Primary and Intermediate £16 16s.; for Final studies only £10 10s.; Annual, 38 guineas.

Further information may be obtained on application to Eric A. Crook, M.Ch., F.R.C.S., Dean of the Medical School, Charing Cross Hospital, London, W.C.2.

Guy's Hospital

The hospital contains 649 beds in constant occupation. Twenty-five beds are set apart for diseases of the eye, and 42 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. There are special wards for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the throat and ear departments, the departments of orthopaedics, neurology, and dermatology, the department for the treatment of diseases of the genito-urinary system, and the children's department; there are also some special beds for the treatment of syphilis.

The residential college fronts the east gate of the hospital, providing accommodation for resident students. This contains a dining hall, reading rooms, a library of general literature, and a gymnasium for the use of the residents and of the members of the Clubs Union. The athletic ground at Honor Oak Park is reached from the hospital in fifteen minutes. The Gordon Museum of Pathology, the Wills Library, the departments of chemistry, physics, pathology, and pharmacology, and the school buildings in general, afford opportunities for a liberal education and for research, and provide the full curriculum for all medical degrees and diplomas. The departments of anatomy, physics, and biology have been reconstructed and equipped on the most modern lines, and provide ample accommodation for teaching and research. Special classes are held for the First and Second Examinations for medical degrees of the University of London, for the pre-medical examination, and for the First and Final F.R.C.S.Eng. Examinations. Special teaching is provided to meet the requirements of the Universities

of London, Oxford, and Cambridge in general pathology and pharmacology.

Appointments.—All appointments are made according to the merits of the candidates, as determined by a committee of the medical staff. Sixteen out-patient officers, eight house-physicians, twenty assistant house-surgeons, eight house-surgeons, two ophthalmic house-surgeons, two genito-urinary house-surgeons, two house-physicians (children's department), two house-physicians (dermatological and neurological), and nine resident obstetric assistants are appointed annually. The house-physicians and house-surgeons, obstetric residents, ophthalmic house-surgeons, and genito-urinary house-surgeons hold office for six months each, and receive free board and lodging in the college. Every student is provided with rooms and commons in the hospital during the period of his "take in" as senior dresser. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, diseases of children, diseases of the nervous system, dermatology, otology, actinotherapeutics, anaesthetics, dentistry, orthopaedics, vaccine, tuberculosis, fractures, and genito-urinary and venereal disease; clinical assistantships in the various special departments are open to post-graduates.

Scholarships, Prizes, etc.—The following scholarships in Arts and Science are awarded. A. Open Junior Scholarships: (1) An Arts Scholarship of the value of £100, (2) a Science Scholarship of the value of £100; these are awarded annually in April. (3) A War Memorial Scholarship of the value of £200, awarded alternately in Arts and Science. This scholarship is open every other year; the next award will be made in April, 1936 (in Arts). B. Confined Scholarship in Science. A junior Science Scholarship of the value of £100 is offered for competition annually in April to candidates who have attended the preliminary science classes at this school. Candidates for these scholarships (male students only) must be under 20 years of age on August 1st of the year of the competition. C. University Entrance Scholarships: (1) A War Memorial Scholarship, entitling the holder to free medical education for three years; (2) an exhibition of the value of £60; both of these are awarded annually in June or July. Candidates will be examined in two of the following subjects at their option: (1) anatomy and embryology; (2) physiology; (3) pathology, including bacteriology; (4) biochemistry. The examination is held in common with the Medical School of St. Thomas's Hospital and the Medical College of St. Bartholomew's Hospital. Full particulars as to the scholarships may be obtained from the Dean of the Medical School. Junior prizes for general proficiency, £20, £15, £10; Hilton Prize for dissection, £5; Michael Harris Prize for anatomy, £10; Sands-Cox Scholarship for physiology, £15 for three years; Wooldridge Memorial Prize for physiology, £10; Beaney Prize for pathology, £34; Treasurer's Medal and Prize in medicine, Treasurer's Medal and Prize in surgery, and the Golding-Bird Gold Medal and Scholarship for bacteriology (£20) are awarded annually after competitive examination. The Gull Studentship in pathology, of the value of £250 per annum, the Beaney Scholarship in materia medica, of the value of about £70, and the Anderson Demonstratorship in clinical chemistry, value £175 per annum, are awarded without examination to enable research to be carried on in these subjects. An Arthur Durham Travelling Scholarship of £100 is awarded triennially. The Griffiths Demonstratorship in Pathology, of the value of £320 per annum, and the Hilda and Ronald Poulton Fellowship, value £150 per annum, are awarded without examination.

An annual composition fee is paid by all students until a registrable qualification is obtained. Further information may be obtained from the Dean of the Medical School, Guy's Hospital, London Bridge, S.E.1.

King's College Hospital

The New Medical School at Denmark Hill, opened in July, 1933, contains the museum, research laboratory, research rooms, common rooms, lecture rooms, refectory, and two squash rackets courts. Provision is made for all the subjects of the medical curriculum. The hospital was opened in 1913, and is one of the most modern and best equipped in England. In the education at the hospital a special feature has always been the individual attention given to each student. The studies are co-ordinated under the direction of senior members of the honorary staff, assisted by medical, surgical, obstetric, and pathological tutors.

The Hall of Residence for members of the medical school is situated on Champion Hill. Both the Hall and the athletic ground are within ten minutes' walk of the school.

The Clubs and Societies Union combines athletics, music, and other societies connected with the school, and provides also a common room.

Appointments.—Thirty-one resident medical and surgical appointments are made during each year, as well as dressers and clerks in the wards, out-patient departments, post-mortem rooms, and special departments. Each of the special departments has clinical assistants. There are eight registrars and four tutors, all of whom receive salaries.

Scholarships, etc.—At entrance: Science Scholarship, £75. At commencement of Final Studies: Anatomy and Physiology Scholarship, £75; Pathology Scholarship, £75; two Raymond Gooch Scholarships, each £105; two Burney Yeo Scholarships, each £105 (for Oxford and Cambridge students); Seaman Scholarships, £50 a year up to five years; Epsom College Scholarship, £100; Senior Scholarship, £40; Todd Prize, Tanner Prize, Cheyne Prize, Legg Prize, Ware Prize, Ferrier Prize in Neurology, Class Prizes and Medals.

Fees.—The composition fee is 93 guineas if paid in one sum. Entrance fee of 10 guineas.

Dental School.—This school was opened in October, 1923, and, in conjunction with King's College, provides complete courses for dental degrees and diplomas.

The calendar of the school can be obtained on application to the Dean, John A. Drake, M.D.; F.R.C.P., D.P.H., or to the Secretary of the Medical School, S. C. Ranner, M.A., King's College Hospital, Denmark Hill, S.E.5.

The London Hospital

This hospital, with its medical college and dental school, is situated in the Mile End Road, E.1. The hospital contains 847 beds, which are in constant use. During 1933 14,515 patients passed through the wards and 106,099 out-patients received treatment. There are special departments for the treatment of diseases of the ear, nose, throat, eye, skin, and teeth, and in addition there are departments devoted to gynaecology and obstetrics, paediatrics, orthopaedics, brain surgery, venereal diseases, radiology, electro- and physico-therapeutics, radium, and vaccine therapy. The number of major operations which were performed amounted to 7,691.

The hospital presents, therefore, a large field for clinical instruction, and in its wards and out-patient and special departments exceptional opportunities are afforded for acquiring an extensive and practical experience of all phases of disease.

A clinical unit in medicine, under the charge of a whole-time director, assisted by an assistant director, two assistants, and two house-physicians, provides for the more elaborate methods of diagnosis and treatment, and takes a leading part in the initiation and co-ordination of medical research. To each medical and surgical firm throughout the hospital there is attached a first assistant, who is responsible for instructing the clerks or dressers of the firm in elementary medicine and surgery, and who assists the honorary members of the firm in the preparation of their demonstrations. In the department of cardiology there is a research scholar and a house-physician. In the department of obstetrics and gynaecology there is a first assistant and two resident accoucheurs. In the department for children's diseases there is a first assistant, one house-physician, and two clinical assistants; and in the department of neuro-surgery there is a house-surgeon. Special courses of lectures and demonstrations are arranged in medicine and surgery and in their ancillary subjects. Opportunities for research are provided under the supervision of the staff.

All the departments are modern and adapted for the teaching of all subjects in the various curricula. Special courses of instruction are held in preparation for the examinations of the University of London, for the Fellowship of the Royal College of Surgeons, and for the Membership of the Royal College of Physicians. Special entries can be made for the medical and surgical practice of the hospital. A resident hostel is provided for the holders of house appointments. A new students' hostel has been opened, and provides accommodation for upwards of fifty students. In the hostel there is a library, writing, common, and dining rooms, and two standard squash rackets courts. The athletic ground, of over thirteen

acres, is at Higham's Park, and is open to all members of the Club's Union.

Appointments.—The salaried appointments, open to past students of the hospital, are those of assistants to the medical unit; first assistants to the medical and surgical firms and to the department of obstetrics and gynaecology; medical, surgical, and obstetric tutors; clinical assistants in the medical, surgical, ophthalmic, aural, light and skin, orthopaedic, and electrical departments, and in the Institute of Pathology. There are appointed annually 4 resident accoucheurs, 16 resident house-physicians and 19 resident house-surgeons, 14 resident receiving-room officers, 8 resident emergency officers, 8 clinical assistants to the medical out-patient department, and 16 clinical assistants to the surgical out-patient department, also paid and unpaid clinical assistants in the various special departments. In addition, there are numerous assistantships, clerkships, and dresserships in the departments of medicine, surgery, gynaecology, and obstetrics.

Scholarships and Prizes.—The following is a list of scholarships and prizes:—At entrance: Price Scholarship in science, £100. Two open scholarships, each of the value of £100. A Scholarship open to students of Oxford and Cambridge Universities: £100, anatomy and physiology; Entrance Scholarship in science, £50; Epsom Scholarship, "free medical education." After entrance: Buxton Prize in anatomy and physiology, £40; Letheby Prizes in organic chemistry and chemical pathology, £25; Prize in clinical obstetrics and gynaecology, £20; Duckworth Nelson Prize in practical medicine and surgery, £10; Hutchinson Prize in clinical surgery, £60; Treves Prize in clinical surgery, £20; Sutton Prize in pathology, £20; Sir Andrew Clark Prize in clinical medicine and pathology, £14; T. A. M. Ross (prox. acc.) Prize in clinical medicine and pathology, £10 10s.; Anderson Prizes in elementary clinical medicine, £20; Dressers' Prizes, £20; Practical Anatomy Prizes, £10; Arnold-Thompson Prize in medical and surgical diseases of children, £15; Liddle Prize, £120; Francis Farmer Entrance Scholarship in biology, chemistry and physics, £25; Harold Fink Prize in dental surgery, £8 8s. The "London" Prize in dental prosthesis, £6 6s. Six class examination prizes of the value of £3 3s. to £5 5s. are offered for competition at the end of the courses of lectures in the dental curricula. Funds to the value of over £113,000 permit of financial assistance being given to students and graduates engaged in medical research.

Fees.—Entrance fee, 20 or 15 guineas, according to examinations passed; annual fee, 40 guineas.

Full information may be obtained from the Dean at the London Hospital Medical College, Mile End, E.1.

The Middlesex Hospital

The school and hospital are in Mortimer Street, W.1, close to Oxford Circus, Goodge Street, and Great Portland Street stations. There are a gymnasium, squash rackets court, common rooms, and restaurant within the hospital precincts, and an athletic ground within easy reach. The hospital contains 534 beds, including a wing containing 90 beds for patients suffering from cancer. There are special wards for maternity and gynaecological cases, for neurological cases, for cases of venereal disease, and for diseases of children and of the skin and eye, and a newly built west wing and residents' house.

The medical school, which includes the Bland-Sutton Institute of Pathology, the S. A. Courtauld Institute of Biochemistry, the Barnato-Joel Laboratories, and the Ferens Institute of Otology, is completely equipped for teaching the entire medical curriculum, including the pre-medical subjects, chemistry, physics, and biology. The Bland-Sutton Institute, under the direction of the Professor of Pathology, contains large pathological and public health laboratories, and smaller rooms for original investigation, as well as a pathological and anatomical museum. Bacteriological and microscopical examinations of material from the wards, operating theatres, and out-patient departments are carried out in the laboratories, and senior students are eligible for clerkships in connexion with this work. Junior assistants in the pathological and bacteriological laboratories are elected annually from recently qualified students. Every facility is given for original research. The Biochemical Institute is under the charge of the Professor of Biochemistry, and contains teaching and research laboratories in addition to those devoted to the routine chemical pathological work of the hospital. The Barnato-Joel Laboratories offer unrivalled opportunities for the study of cancer in both its clinical and its pathological aspects.

Appointments.—Thirty-three resident appointments are open annually for competition among students of the hospital. The officers reside and board in the residential college free of expense. Two casualty medical and two casualty surgical officers, and four resident officers to the special departments, are appointed annually. Eight house-surgeons are appointed every year at intervals, after examination; eight house-physicians are also appointed annually at similar intervals. An obstetric and gynaecological house-surgeon is appointed every six months. One senior and two junior resident assistant anaesthetists are appointed annually. A dental house-surgeon is appointed every eight months. Nine registrars, each at a salary of £300 per annum, are appointed annually. In the out-patient departments and wards the appointments are: clerk and dresser to the physicians and surgeons to out-patients; clerk in the departments for diseases of the skin and nervous diseases; dressers to the department for diseases of women, to the ophthalmic surgeon, to the throat and ear department, to the orthopaedic department, and to the dental surgeon. Extern midwifery clerks and post-mortem clerks are also appointed; every student secures six months' experience in midwifery and gynaecology without leaving London. The appointments are so arranged that every student may, during his course, hold all the out-patient and in-patient clerkships and dresserships. Non-resident qualified clinical assistants are appointed in the medical, surgical, skin, neurological, ophthalmic, throat and ear, odontological, children's, and electro-therapeutic out-patient departments.

Scholarships.—There are two Entrance Scholarships, value £100 each. Two annual Entrance Scholarships, of the value of £90 and £60 respectively, are open to students of the Universities of Oxford and Cambridge who have completed the curriculum for, or passed the examinations in, anatomy and physiology. Students joining the school in the previous April are eligible. The Freer Lucas Scholarship is annually awarded on the nomination of the Head Master to a pupil of Epsom College who has passed the first examination for medical degrees (Preliminary Scientific Examination). There is also a scholarship, awarded annually to students from New Zealand, which affords the holder the clinical advantages of the hospital for one year. In addition to the Entrance Scholarships, there are numerous other valuable scholarships, prizes, and exhibitions open to students of the hospital, including the Broderip Scholarships, value £60 and £40; Lyell Gold Medal and Scholarship, value £55 5s.; Freeman Scholarship, value £30; John Murray Gold Medal and Scholarship, value £25; Hetley Clinical Prize, value £25; Leopold Hudson Prize, value 11 guineas; and the Second Year's Exhibition, value 10 guineas.

The rebuilding of the hospital is being completed without the loss of a single bed, or any disorganization of its clinics.

Fees.—(*a*) Entrance fee, 25 guineas, payable on joining the medical school. Pre-medical students: For one year or less, £21. (*b*) Students who have completed the Preliminary Science course: Five annual fees of £45. The annual fee for further attendance at the medical school, if a registrable qualification has not been obtained, is £23. (*c*) Oxford and Cambridge and other students who have completed the Intermediate course: entrance fee, 15 guineas; three annual fees of £45; further annual fees as above. These fees are inclusive and cover the cost of instruction in vaccination, fevers, etc., and also the subscription to the amalgamated clubs and hospital journal.

Further information may be obtained from the Dean or the School Secretary.

St. Bartholomew's Hospital

This institution fills one side of Smithfield and Giltspur Street, covering the greater part of a large island of ground separated practically from all other buildings; it is on the edge of the City, and easily reached from all parts of London. The hospital contains 762 beds. Extensive buildings, opened in July, 1907, occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the hospital as a place of medical study. The medical school buildings, including the library, the museum, and the chemical, biological, and anatomical departments, have now at their side a very large building, which includes club rooms for the Students' Union, a writing room, luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any

hospital in the kingdom. During the year 1909 a second block of new buildings was completed. These form the pathological department, and include, in addition to an extensive post-mortem room, large and well-equipped laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country. A further large block in Giltspur Street was acquired in 1923, and has been equipped by the construction of new lecture theatres and extensive laboratories for physics, chemical physiology, experimental physiology, histology, and pharmacology. The new block of surgical wards and five operation theatres (one attached to each surgical unit), with accommodation for 250 patients, was opened in June, 1930. One of the old blocks previously used for surgical cases has been reconverted for the housing of an enlarged gynaecological and obstetrical unit, with separate operation theatres attached. The Students' Union owns grounds of some ten acres in extent for recreative purposes at Winchmore Hill, which is easily accessible from the hospital.

The Medical College has recently purchased the site and buildings in Charterhouse Square (five minutes' walk from the hospital), formerly occupied by the Merchant Taylors' School, and the whole of the pre-clinical departments will shortly be established there. Various athletic amenities are also available on this new site.

Special classes are held for students preparing for the Preliminary Scientific and other examinations, for the M.B., M.D. of the Universities of Oxford, Cambridge, and London, and for the higher surgical degrees at the same universities, including the M.Ch.Oxon., M.Chir.Cantab., M.S.Lond., and F.R.C.S.Eng.

Clinical Units.—Special clinical units have been established in medicine and surgery, each under the charge of a professor and director, who devotes the whole of his time to the purpose of hospital practice, teaching, and research. In each unit there are an assistant director and four assistants, for whom special laboratory accommodation has been provided by a gift from the Sir William Dunn Trustees. The appointments of clerks and dressers in these departments are open to all students, and arrangements are made for all students to study in these units during a part of their clinical course.

Appointments.—Clinical clerks to the physicians and to the physician-accoucheur, and dressers to the surgeons and in the casualty department, are chosen from the students; clerks and dressers are also selected from the students to attend in the out-patient rooms, in the special departments (ophthalmic, orthopaedic, gynaecological, children's, laryngological, aural, dermatological, venereal, electrical, and dental), and in the post-mortem room. Chief assistants and clinical assistants are selected from qualified men appointed yearly to help in the general medical, surgical, and in special departments. Ten house-physicians and ten house-surgeons are appointed annually. During their first six months of office they act as "junior" house-physicians and house-surgeons, and receive a salary of £80 a year. During their second six months they become "senior" house-physicians and house-surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident midwifery assistant, an ophthalmic house-surgeon, a house-surgeon to the skin and venereal department, and a house-surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Three resident administrators of anaesthetics are appointed—the senior for one year at a salary of £150, and two juniors for six months with a salary at the rate of £80 per annum—and all are provided with board and rooms. An extra midwifery assistant is appointed every three months, and receives a salary of £80 a year.

Scholarships.—Five Entrance Scholarships and Exhibitions are annually awarded after examinations held in July, and one (the Shuter Scholarship) after examinations held in June. The subjects of examination and conditions of eligibility for these scholarships are: (1) and (2) one scholarship, entitling the holder to free undergraduate medical education for a period of three years, and one exhibition, value £60, in any two of the following subjects: human anatomy and embryology, physiology, pathology (including bacteriology), biochemistry. Candidates must have completed their examinations in anatomy and physiology in a British school or university outside the London Metropolitan area. (3) One scholarship, value £100, in the three following subjects: chemistry, physics, biology; limited to students under 21 years of age who have not entered on the medical or surgical practice of any London medical school. (4) An entrance scholarship in arts, of the value of £100, in mathematics; Latin or Greek or French or German; a second language or chemistry or physics. (5) The Jeaffreson Exhibition in the same subjects as No. 4, of the value of £50. Candidates for Nos. 4 and 5 must be under 19 years of age. (6) Helen Cave Memorial Scholarship, awarded after open competition to sons of registered medical practitioners, value about £200, conditions obtainable from the Dean. (7) The Shuter Scholarship value £50, in anatomy and physiology, is confined to Cambridge graduates. The total value of the scholarships and prizes is over £1,700 annually.

Further information and a handbook can be obtained on application to the Dean of the Medical College, St. Bartholomew's Hospital, E.C.1.

St. George's Hospital

This school is at Hyde Park Corner, and is carried on in connexion with St. George's Hospital, an institution having a service of 436 beds, of which 100 are at the convalescent hospital at Wimbledon. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centres of London University established at King's College and University College. The school at Hyde Park Corner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of university and all other examinations receive careful attention.

The St. George's Hospital Club consists of an amalgamation club, with smoking and luncheon rooms on the hospital premises, and other students' clubs, with an athletic ground at Wimbledon. Students have the advantage of a well-filled library of medical and scientific books. A register of accredited apartments and a list of medical men and others willing to receive St. George's men as boarders may be seen on application to the Dean.

Appointments.—Two house-physicians, two house-surgeons, and two casualty officers are appointed every three months. The house officers reside and board in the hospital free of expense. The casualty officers are non-resident, and receive salaries at the rate of £60 per annum. After the student has held a house appointment the following are, among others, open to him: assistant resident physician at £250 per annum; surgical chief assistant at £225 per annum; medical officer to the Atkinson Morley Convalescent Hospital at £300 per annum; medical registrarship at £200 per annum; medical officer to the biochemical department at £100 per annum; assistant curatorship of the museum, £100 per annum; obstetric assistantship, resident, at £100 per annum; the post of resident anaesthetist at £100 per annum.

Scholarships.—The following Entrance Scholarships and Exhibitions in anatomy and physiology and in general pathology are awarded in July to candidates who have passed the second M.B.London or corresponding examination; Senior William Brown Exhibition of the value of £120; Junior William Brown Exhibition of the value of £80; Anne Selina Fernee Scholarships (two) of the value of £80 each; Anne Selina Fernee Exhibitions (two) of the value of £60; Devitt-Pendlebury Scholarship of the value of £40; and Exhibitions, each of the value of £40 and up to four in number. Other prizes to the value of £200 are awarded annually to the students of the hospital.

Fees.—First year (First M.B. or pre-medical course), £36 15s.; second and third years, £42 each. For the course of clinical study, in the fourth and subsequent years, entrance fee, £10 10s.; annual composition fee, £42. No entrance fee is payable by St. George's students who have studied at King's College or University College.

Further information may be obtained from the Dean of the Medical School.

St. Mary's Hospital

St. Mary's is exceptional in its situation, for while it is adjacent to a large poor district in which it serves some 500,000 persons, one-tenth of whom (on an average) pass through the hospital annually for treatment of one kind or another, it is, nevertheless, so near to Kensington Gardens and one of the best residential districts of London

that it offers to the medical student the unusual possibility of living in close touch with his work, without a wearisome journey in an overcrowded train or tube. As a direct outcome of this, social life among students is closer than is possible where the members of a school live scattered in many parts of London and its suburbs.

The rebuilding of the Medical School and Institute of Pathology has just been finished. The new school occupies a site adjacent to the hospital, and provides departments for teaching the entire curriculum. There are also a students' club and restaurant, a large library, a gymnasium, a swimming bath, a squash rackets court, and an underground garage for fifty cars.

The principle underlying the clinical teaching is to encourage the student, under supervision, to carry out for himself the various methods of clinical investigation and treatment. This is secured by the provision of a very large number of appointments, and by developing the system of clinical clerkships and assistants. Large classes are avoided whenever possible, and the intimate association between staff and student has been reinforced by the institution of Clinical Units. St. Mary's is one of the three medical schools in London to enjoy the great advantages in teaching and research which these units confer. The clinical material is exceptional. A new block has recently been added containing two operating theatres and 60 beds. Owing to affiliation with adjacent hospitals, more than 1,000 beds are now available for teaching. There are lying-in beds at St. Mary's, with 450 confinements yearly, and in addition to the instruction thus obtained each student is sent (without further fee) to Queen Charlotte's Hospital for a fortnight as part of his training in midwifery.

Students especially interested in pathology and bacteriology have singular advantages at St. Mary's. The institute comprises seven special departments, the whole being under the personal direction of Sir Almroth Wright. Two Research Studentships of £200 each are awarded annually.

From three to five Entrance Scholarships, each representing free tuition, are awarded annually by nomination on the lines of the Rhodes Scholarships. Full particulars may be obtained from the School Secretary, St. Mary's Hospital, Paddington, W.2. Numerous appointments are open to newly qualified members of the medical school, including seventeen salaried posts with salaries varying up to £750 per annum.

A special post-graduate course is held at the beginning of October and is open to all general practitioners and other qualified men without fee.

The athletic ground (10 acres) at Wembley is within easy reach of the Medical School.

St. Thomas's Hospital

The Hospital and Medical School are situated along the Albert Embankment between Westminster and Lambeth Bridges. The buildings form one of the most striking architectural features of London, opposite the Houses of Parliament, with Lambeth Palace and the beautiful grounds adjoining immediately to the East.

The hospital consists of eight linked-up pavilions, the Medical School buildings being separated from the hospital by a quadrangle ; they comprise a magnificent Department of Anatomy with its own lecture theatre, museums, and research laboratory, the School of Physiology, named after Sir Charles Sherrington, O.M., completely equipped for teaching and research, a newly rebuilt Department of Chemistry with special facilities for research ; Physics and Biology Laboratories. The school buildings contain also the library and reading room, which overlook the river and contain approximately 8,000 volumes, also an excellent supply of periodical literature adapted to the needs of medical students and research workers. The Museum, named after Professor S. G. Shattock, is also situated in the School ; it contains nearly 5,000 preparations, which illustrate all the morbid lesions of importance met with in the various organs of the body, many specimens of historical interest, and a type series to illustrate medical, surgical, and gynaecological pathology. In the west wing of the School are the Pathological Institute and the Photographic Department. The post-mortem room was entirely rebuilt in 1932 ; it is a model of its kind, with a large demonstration amphitheatre, which is perfectly adapted for teaching purposes and for the intimate study of morbid pathology.

The complete curriculum is provided for ; students can join the Medical School directly after passing the requisite examination in general education, and proceed at once to the study of the first M.B. pre-medical subjects, which are taught by experienced professors and lecturers with the assistance of full-time demonstrators. Private coaching facilities are available for those students who wish to supplement the routine classes which cover the entire syllabus laid down by the various examining boards. Most students, particularly those entering for the first M.B. pre-medical examination, enter in October, but the clinical studies are arranged in three-monthly periods, and students can join at any time of the year for the Intermediate and Clinical studies. Classes for the Primary F.R.C.S. are held before each examination ; these classes are limited to students who have joined for the full curriculum, and are therefore small, permitting of intimate personal teaching. Revision classes in anatomy and physiology are arranged for students from Oxford and Cambridge. Classes in pharmacology and materia medica and pharmacy cover the requirements of all the examining bodies.

Clinical Studies.—The hospital contains 644 beds ; in addition it has 30 beds (with teaching facilities over a further 150) at the Pyrford Orthopaedic Hospital, and 22 beds at the St. Thomas's Babies' Hostel in Lambeth. During 1933 the number of patients admitted into the hospital was 11,528 ; during the same period 98,780 out-patients were treated. In the Maternity Department 2,630 women attended ; 420 were admitted into the special maternity ward and 660 were delivered in the district. Casualties to the number of 166,281 attendances were dealt with during the same period. In addition to the 696 beds actually controlled by the hospital, students have the advantage of a close liaison with Lambeth Hospital, where demonstrations of rare and advanced cases, such as are seldom seen in the wards of a general hospital, are arranged at regular and frequent intervals by the superintendent. The obstetric training of students has, during 1934, been supplemented by an arrangement with St. James's Hospital, Balham, whereby throughout the year two students at a time spend a fortnight in residence at St. James's Hospital, where they follow, and take part in, the maternity work of the hospital. Clinical teaching of medicine and surgery is carried out daily throughout the year in the wards and out-patient departments. From the day that a student enters on his clinical studies he comes into direct responsible contact with patients. Every student acts as clerk in the post-mortem room and in the pathological laboratories. The Medical Unit, through which every student passes for a period of three months, provides a very thorough grounding in clinical medicine and clinical biochemistry, the in-patient clerking being afterwards completed under the aegis of a different medical firm. In addition to three months' dressing in the casualty department at the outset of his clinical studies, every student becomes, for six months, a dresser to one of the surgeons of the hospital ; during this period he receives instruction in anaesthetics. Great stress is laid on the teaching of pathology, which proceeds *pari passu* with the clinical appointments held by the student throughout the curriculum. The special maternity ward in the hospital gives the student scope for elementary obstetric training before he takes his turn of duty on the district, where again he works under close supervision. All the special departments are available for the teaching of students ; special attention is given to ante-natal instruction and the teaching of the diseases of children, a department through which every student passes. The laboratories and reading room in the units building are open day and night for those who wish to avail themselves of these facilities. A special Tuberculosis Department in the hospital forms a part of

the Lambeth scheme for the treatment of patients. The Venereal Disease Department is part of the L.C.C. scheme. The clinical material in the hospital is placed wholly at the disposal of undergraduate students; with the exception of a small class held twice yearly for the Final F.R.C.S. Examination, post-graduate clinical students are not accepted. Special tutorial classes in all subjects are held before all the final examinations of the universities and Conjoint Board.

St. Thomas's House—the Amalgamated Students Clubs' premises immediately opposite the hospital—was opened in 1927; it has all club amenities, with two squash rackets courts, a miniature rifle range, and ample garage accommodation. The hostel in the same building has accommodation, with all modern comforts, for 50 resident students. There is a hard tennis court in the Medical School quadrangle, and the beautiful sports ground at Chiswick provides for all field games.

Appointments.—Following qualification the following appointments are open to students: twenty-five clinical assistantships to the various special departments are appointed every three months. Eight resident casualty officers and anaesthetists, seven house-physicians, and nine house-surgeons are appointed every six months. Nine chief assistants (unpaid) to the special departments and nine non-resident registrars (medical, surgical, obstetric, and ophthalmic) at a salary of £250 to £300 a year hold appointments renewable yearly. A resident anaesthetist (salary £200), a resident assistant physician, and a resident assistant surgeon (salary £225 per annum) are appointed annually. Assistants in the medical and surgical units (salary £450 to £600) hold appointments with a maximum tenure of four years. Three assistants in the Department of Pathology hold appointments at a salary of £450 to £600 a year.

Scholarships and Prizes.—At this School there are the following Entrance Scholarships: Three in Natural Science, of the value of £150, £100, and £60 respectively; the University Scholarship of £100 in any two of the following: anatomy, physiology, pathology, chemistry, also the "Hector Mackenzie" University Exhibition of the value of £60. The value of all Entrance Scholarships is taken out in Tuition Fees. The money value and subjects of examination of the remainder are as follows: (*a*) William Tite Scholarship for second-year students £25; (*b*) and (*c*) Musgrove Scholarship or (alternatively) Peacock Scholarship each for third-year students and tenable for two years £35 each; (*d*) Mead Medal, medicine, pathology, and hygiene; (*e*) Wainwright Prize, medicine; (*f*) Toller Prize, medicine; (*g*) Cheselden Medal, surgery and anatomy; (*h*) Clutton Memorial Medal in Clinical Surgery, biennial; (*i*) Beaney Scholarship £50, biennially, surgery and surgical pathology; (*j*) Solly Medal and Prize, biennial, reports of cases; (*k*) Sutton Sams Prize, biennial reports of cases; (*l*) Bristowe Medal, pathology and morbid anatomy; (*m*) Hadden Prize, pathology and morbid anatomy; (*n*) Grainger Testimonial Prize £31 10s., anatomy and physiology; (*o*) Louis Jenner Research Scholarship tenable for two years, £60 annually, pathology; Perkins Fellowship £40–£100, research; Myers Prize in Psychological Medicine 10 guineas.

University College Hospital

The school, which forms part of the corporation of University College Hospital, is in immediate proximity to the hospital in University Street, and opposite University College. It comprises departments of medicine, surgery, midwifery and gynaecology, pathology including morbid anatomy, chemical pathology, biochemistry and bacteriology, cardiography, forensic medicine, mental physiology and mental diseases, dental surgery, practical pharmacy, and other departments for the study of special diseases, such as those of the eye, skin, ear and throat, venereal diseases, and for instruction in anaesthetics, electro-therapeutics, and skiagraphy. The hospital and school have acquired the National Dental Hospital and College as their dental departments, thus providing every facility for the study of dental subjects. The Royal Ear Hospital has also been amalgamated as the Ear, Nose, and Throat Department, and a new hospital for in- and out-patients, close to University College Hospital. It contains 41 beds, including eight private wards for patients of limited means.

The school thus provides the final course of study for the degrees of the Universities of Oxford, Cambridge, London, Durham, and other British universities, and for the diplomas of the Royal Colleges of Physicians and Surgeons in medicine and in dental surgery. Each department is also equipped for more advanced work, and provides facilities for research.

Clinical units in medicine, surgery, and obstetric medicine are now in operation. The whole-time directors of the units are concerned with the organization of the teaching generally, but the honorary staff is responsible for the largest share of the teaching in the wards and out-patient department of the hospital. The main hospital contains 414 beds.

The new buildings of the obstetric hospital of 85 beds (rendered possible by the Rockefeller benefaction), the new Residents' House (with accommodation for 33 residents and students), the extension of the Nurses' Home, and the new research laboratories for the Medical School, are now finished and in full occupation.

A Students' Hostel adjoins the Medical School. Large, airy, and handsomely furnished bed-sitting rooms, each fitted with hot and cold running water, are available.

Appointments.—The qualified appointments, in addition to a number of posts as house-physicians and house-surgeons and obstetric assistants, include the appointments of resident medical officer, medical registrars, surgical registrars, obstetric registrar, Harker Smith radium registrar, ophthalmic registrar, casualty medical officers, casualty surgical officers, assistants in ear, nose and throat, skin and venereal diseases departments, and house anaesthetists.

Scholarships.—The following scholarships and prizes are open to competition: Two Goldsmid Entrance Scholarships entitling the holder to the final course of medical study; one Goldsmid Entrance Exhibition entitling the holder to a reduction by £80 of the fees due for the full course of final medical study, open to candidates who are graduates in arts or science of a university of the British Empire; and a Filliter Entrance Scholarship in pathology, entitling the holder to a reduction by £52 10s. of the fees due for the full course of final medical study. The examination for these scholarships is in any two of the following subjects: anatomy, physiology, general pathology and biochemistry. The examination for 1935 will be held as follows: Monday, July 15th, 10 a.m. to 1 p.m., anatomy; 2 p.m. to 5 p.m., physiology. Tuesday, July 16th, 10 a.m. to 1 p.m., biochemistry; 2 p.m. to 5 p.m., general pathology. Candidates for the Filliter Exhibition need take pathology alone. Radcliffe Crocker Travelling Scholarship in dermatology for one year, value about £280; the Graham Scholarship in pathology of a sum not exceeding £400 per annum; Leslie Pearce Gould Research Scholarship in surgery for one year, value about £260; the Atkinson Morley Scholarship of £45 a year for three years, awarded after examination in the theory and practice of surgery; the Atchison Scholarship of £55 a year for two years for general proficiency in medical studies; the Magrath Clinical Scholarship, value about £160; Ferriere Scholarship, value £25; the Filliter Exhibition in pathology of £30; the Percival Alleyn Prize for the advancement of surgery by research, value about £110; the Graham Gold Medal for research work; four Fellows Medals in clinical medicine; Liston Medals in clinical surgery; the Bruce Medal in pathology and surgery; two Tuke Medals in pathology; the Erichsen Prize for practical surgery; and the Roberts Prize in obstetrics and gynaecology.

Fees.—Inclusive fee to cover complete clinical course: £45 per annum for three years. Oxford and Cambridge students who have completed their course in pathology: £40 per annum for three years. There are no extras, as these fees include courses of instruction in pharmacy, vaccination, and fevers, and life subscription to the Medical Society or Women's Medical Club.

Particulars of general and special courses can be obtained on application to the Dean of the Medical School, University College Hospital, University Street, W.C.1.

Westminster Hospital

The school, with its hospital situate in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the University of London at King's College, Strand, and University College. The rest of the work is done in the school buildings near the hospital. The number of in-patients averages 4,800 and out-patients upwards of 27,000 annually, and the hospital and school afford ample facilities for instruction in all branches of medicine and surgery. Every student must perform the duties of out-patient dresser for three months, and afterwards hold the office of in-patient dresser for three months. He is

also required to serve two terms of three months each as medical clinical clerk to the in-patient physician, and one term as gynaecological clinical clerk. Two pathological clerks are appointed every three months to assist in the post-mortem room. No student is eligible as an in-patient dresser or clinical clerk until he has completed his examination in anatomy and physiology. Clerks and dressers in the special departments of hospital practice are periodically appointed.

An annexe devoted to radium therapy and research, containing twenty-two beds, has recently been opened.

The athletic ground is situated at Tooting, and can be reached in twenty minutes from the hospital.

Appointments.—A medical and surgical registrar are appointed annually, each with a salary of £150, and an obstetric registrar with a salary of £50 plus £50 for tutorial fees. An assistant medical registrar and an assistant surgical registrar, salary £100 per annum each, are appointed for six months. A senior resident and casualty officer, salary £104 per annum and board, appointed for six months, may be extended for a further period of six months. A medical registrar to the children (Wander scholar), salary £250, is appointed for one year. Three house-physicians, three house-surgeons, three assistant house-physicians, three assistant house-surgeons, and a resident obstetric assistant are appointed after examination, and are provided with rooms, commons, and salary of £52 per annum, except the assistant house-physicians and the assistant house-surgeons, who are provided with commons only. The assistant house-physicians, after three months' service, become house-physicians for a further period of six months, and the assistant house-surgeons, after three months' service, become house-surgeons for a further period of six months. One house-anaesthetist is appointed for six months, non-resident, salary £100 per annum. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among the qualified students.

Scholarships.—The following open scholarships are offered for competition during the year 1934–5. In the winter session two scholarships in anatomy and physiology, £75 each. In the spring two scholarships in anatomy and physiology, £75 each. A certain number of scholarships are allotted to universities of England, Wales, and the Colonies, and to public schools. These scholarships are awarded entirely on the nomination of the Principal of the university or school.

During the period of study the following prizes may be competed for: Sturges Prize in Clinical Medicine (Reports on Cases); Chadwick Clinical Surgery Prize (Reports on Cases); Chadwick Prize (Medicine and Surgery); Frederic Bird Medal and Prize; Abraham's Prize (Clinical Pathology); Hanbury Prize in Diseases of Children; Class Prize in Midwifery, Diseases of Women, Medicine, Pathology, Forensic Medicine, Bacteriology, Public Health, and Surgery.

Fees.—The annual composition fee is 40 guineas. An entrance fee is payable by all students—namely, primary and intermediate students, £10 10s.; students entering for the final subjects, £8 8s. These fees, which include subscriptions for membership of the Clubs Union, are subject to alteration from time to time as the School of Medicine may direct.

Further information and a prospectus can be obtained on application to the Dean at the Westminster Hospital Medical School, Caxton Street, Westminster, S.W.1.

London (Royal Free Hospital) School of Medicine for Women

The school is situated at 8, Hunter Street, Brunswick Square, W.C.1, close to the Royal Free Hospital. It is, like all the other London schools which have so far been mentioned, one of the constituent schools of the University of London. The laboratories are extensive and well lighted, and are fully equipped for the examination courses of the University of London and the Royal Colleges of Physicians and Surgeons. Research laboratories are attached to all departments. A large, well-equipped library, common room, Union Room, and refectory are provided for the use of students. Resident accommodation for 80 students is provided in students' chambers attached to the school.

The Royal Free Hospital, Gray's Inn Road, W.C.1, has 301 beds, all of which are available for clinical instruction. The obstetrical and gynaecological unit controls 68 beds. A large maternity district is served from the unit with a separate maternity hostel in the Essex Road, Islington. There are separate departments for diseases of the eye, ear, and skin, children and infant welfare, venereal diseases, orthopaedic surgery, massage, light, electrical and *x*-ray work, dentistry, and casualty. Students attend the practice of one of the fever hospitals of the London County Council and receive special instruction in lunacy at Horton Mental Hospital, Epsom; they are also admitted to the practice of a number of special hospitals, and hold clerkships and dresserships at the Elizabeth Garrett Anderson Hospital, the Cancer Hospital, Hospital for Sick Children, Great Ormond Street, the National Hospital for Nervous Diseases, the South London Hospital, the Central London Ophthalmic Hospital, and the Royal Ophthalmic Hospital. The work of the school includes preparation for the Primary Fellowship examination.

Appointments.—Qualified students of the school can obtain appointments as house-physicians and house-surgeons, obstetric assistants, surgical, gynaecological, and medical registrars, assistant pathologists, assistant anaesthetists, medical electrician, skiagrapher, and clinical assistants and demonstrators in various subjects.

Scholarships.—The Isabel Thorne and A. M. Bird Entrance Scholarships, value £30 a year for six years, the St. Dunstan's Medical Exhibition, value £60 a year for three years, which may be extended to five years, the Alfred Langton Scholarship of £50 a year for two years, the Flora Murray Bursary of £50, and the Mabel Sharman-Crawford Scholarship, value £20 a year for four years, are offered for competition in each year. The Sir Owen Roberts Memorial Scholarship of the value of £75 a year for four years; the Mrs. George M. Smith Scholarship of the value of £50 a year for three years, which may be extended to five years; the Dr. Margaret Todd Scholarship of the value of £37 10s. a year for four years; and the Sarah Holborn Scholarship of the value of £20 a year for three years, which may be extended to five years, are awarded in alternate years. The School Jubilee Bursary of £50 a year for three years is offered every third year. The Bostock Scholarship, value £90 a year for two or four years, is awarded by the Reid Trustees on the result of an examination held in May by the University of London every fourth year. The holder of the scholarship must enter the London School of Medicine for Women. The Lieutenant Edmund Lewis and Lieutenant Alan Lewis Memorial Scholarship, of the value of £25 a year for four years, is awarded every fourth year. The A. M. Bird Clinical Scholarship of £30 a year for three years. The John Byron Bursary of £20 a year for two years, the Julia Ann Hornblower Cock Prize of £60, the Helen Prideaux Prize of £60, the Mabel Webb and A. M. Bird Research Scholarship of £200 for one year, the Fanny Butler Scholarship of £16 a year for four years, the A. M. Bird Post-graduate Scholarship of £200 for one year, together with many other scholarships and prizes, are offered on sundry conditions. The Dr. Edith Pechey-Phipson Post-Graduate Scholarship of £100 is awarded annually. Altogether the school offers annually £1,950 in scholarships. Various missionary societies also offer scholarships on certain conditions, and assist women who wish to go to India and other countries as medical missionaries.

Fees.—Courses for the University of London degrees and the diplomas of the Conjoint Board in England, and other qualifications: £50 per annum throughout the course.

The Students' Union exists to promote corporate action of the students on matters of common interest, to promote and maintain athletic and other clubs, and to issue a school magazine. All students are required to become members of the Union.

Further information can be obtained from the Warden and Secretary.

King's College

The Medical Faculty at this College of the University of London gives instruction in the subjects of medical science for all the usual preliminary and intermediate examinations in medicine, surgery, and dentistry. Through the four associated hospitals students of the college have clinical facilities of over 1,000 beds, but they may also proceed to any other teaching hospital in London for final studies for the degrees of the University of London.

The Medical Faculty of the College provides a general university education in touch with other faculties, classes of which medical students are permitted to attend. There are many college societies, clubs, and functions in which students of all faculties have opportunity of meeting each other. The college has a large athletic ground at Mitcham, upon which there has recently been erected a new pavilion.

The first-year subjects are taught in the large departments of the Faculty of Science. Within the last few years there has been complete remodelling of the second and third year medical departments at a cost of £70,000. This has comprised a new Department of Anatomy and reorganization, with considerable extension, of the Department of Physiology.

Scholarships.—The entrance scholarships are: (1) Two Warneford Scholarships, each £30 for four years; subjects—selected from mathematics, classics, divinity, and science. (2) One Sambrook Scholarship of £30 for three years; subjects of examination selected from mathematics, classics, and science. The holders of the preceding awards must proceed to King's College Hospital. (3) Worsley, £100, paid in five annual instalments. (4) Rabbeth Scholarships, value £30 and £15, in July, for the best student of the first year. (5) Daniell Scholarship, £40, awarded on the results of the University Honours Examination. (6) The Layton and Berridge Studentships, each £150 and £100 per annum respectively, and (7) numerous prizes.

Full information as to admission, fees, and scholarships can be obtained from the Dean of the Faculty of Medical Science, King's College, Strand, W.C.2.

University College

This institution, one of the principal component parts of the University of London, possesses a Faculty of Medical Sciences whose work covers all the subjects included in the group commonly known as the preliminary medical sciences—namely, physics, chemistry, botany, and zoology; and also the intermediate medical sciences—namely, anatomy (including embryology and histology), physiology, biochemistry, and pharmacology. The anatomy building, provided by the munificent gift of the Rockefeller Foundation of New York, was opened on May 31st, 1923, by His Majesty the King. This building forms part of the block which includes physiology and pharmacology. A new building has recently been added for the department of zoology, for the endowment and equipment of which the Rockefeller Foundation has made another generous benefaction. Research work is undertaken in all the above-named departments. The College undertakes the education of students in all the subjects mentioned, leaving them free to complete their education in the strictly professional subjects—medicine, surgery, and the like—at any one of the recognized schools of advanced medical studies. The work is somewhat differently arranged, according to whether the student has in view the degrees of the University of London or the diplomas of the Royal Colleges. In either case the whole work to be done is divided into courses devised to meet the requirements of different examinations, and students can join the College for any of them. Women students are admitted to all courses on the same terms as men. The general arrangements for the benefit of students include membership of the Union Society or the Women's Union Society, with use of the College gymnasium and the athletic grounds. There is also a collegiate residence for about sixty-seven men students at Ealing and for one hundred and seventy-two women students in Malet Street.

Scholarships.—The scholarships and exhibitions obtainable include the Bucknill Scholarship, value 160 guineas, in chemistry, physics, botany, and zoology (the successful student must complete his work at University College Hospital Medical School)—the examination includes an English essay; two Entrance Exhibitions in the same subjects, each of the value of 55 guineas; a Faculty of Medical Sciences Entrance Scholarship, value £30 a year, for three years; the Bayliss-Starling Memorial Scholarship (physiology and/or biochemistry), £120; and the Ferriere Scholarship, £25, tenable for three years at University College Hospital Medical School.

Fees.—The fees for the courses covering the work of the First Examination for medical degrees of the University of London, and in both parts of the Second Examination, amount to 115 guineas. The fees for the courses covering the corresponding examinations held by the Conjoint Board in England also amount to 115 guineas. These fees do not cover tuition for more than a stated period.

A handbook specially relating to this faculty may be obtained on application to the Secretary of University College, London, Gower Street, W.C.1.

THE PROVINCES

There are in England and Wales, not counting London, ten medical schools, each supplying instruction in the full medical curriculum. Accounts of them here follow. In several cases information is appended about hospitals other than those directly connected with the school in question; such hospitals, officially and unofficially, play a part in the education which the students of the school receive, and in any case serve as places of additional or post-graduate study.

Oxford and Cambridge

At both Oxford and Cambridge there are medical schools which furnish unsurpassed opportunities for obtaining a good knowledge of the preliminary sciences and of anatomy, physiology, and pathology. The laboratories are excellently furnished, and the teaching staffs most distinguished. Both schools provide a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them; but this is not commonly done, and is never, in the ordinary way, advised by the university medical authorities. The local hospitals—the Radcliffe Infirmary at Oxford and Addenbrooke's Hospital at Cambridge—though well equipped, are comparatively small. Students are therefore encouraged, as soon as they have completed the earlier examinations and taken a degree in arts, to join one of the London medical schools, and thus spend the time of their preparation for the final examinations in a city where the opportunities for gaining clinical knowledge are greater and more varied. A considerable proportion of Oxford and Cambridge medical students take the London Conjoint diplomas before graduating in medicine and surgery at their own university. The experience gained by holding resident hospital appointments is naturally of much advantage when sitting for the Final M.B. examination and when engaged in composing a thesis.

Birmingham

The school in this city is carried on by the Medical Faculty of the University of Birmingham, its students having an adequate number of good laboratories, classrooms, and other necessaries devoted to their use by the university. The clinical work is done at the General and Queen's Hospitals, which are amalgamated for the purpose. Together they have upwards of 800 beds for medical, surgical, and special cases, with an array of special departments of all kinds, including one for lying-in women (about 13,000 in-patients and 90,000 out-patients). Clinical instruction is given in the wards and out-patient and special departments daily, and formal clinical lectures are delivered weekly throughout the session. Special tutorial classes are also held alike for the degrees of Birmingham and other universities, and for the diplomas of corporations.

Appointments.—The large number of appointments open to past or other students includes the following:—At the General Hospital: two surgical registrars, £100 (commencing) a year; one resident medical officer, salary £155 a year; one resident surgical officer, salary £180 a year; one assistant resident surgical officer, salary £100 a year; one resident pathologist, salary £70 a year; two visiting anaesthetists, salary £50 a year; two resident anaesthetists, salary £120 a year; four house-surgeons, office tenable for nine months, £70 a year; one house-surgeon to the gynaecological and one to the special departments, each tenable for six months, £70 a year; four house-physicians, post tenable for six months, £70 a year. At the Queen's Hospital: one resident medical registrar, salary £200 a year; two resident surgical officers, £100 a year, tenable for three years; three house-physicians, three house-surgeons, one obstetric and one ophthalmic house-surgeon, one ear, nose, and throat house-surgeon, and one house-physician for duty at the Nerve Hospital (associated with Queen's Hospital), tenable for six months, salary £70 a year, with board, lodging, and washing; one casualty house-surgeon,

tenable for three months, salary £70 a year, with board, lodging, and washing. At the City Public Assistance Institutions: five resident medical officers. At the Birmingham General and Branch Dispensaries: twelve resident surgeons. At the Birmingham Mental Hospitals: five assistant medical officers. At the City Fever Hospitals: three assistant medical officers. At the Children's Hospital: one resident surgical officer, one resident medical officer. At the Birmingham and Midland Eye Hospital: four resident surgeons. At the Orthopaedic and Spinal Hospital: two clinical assistants (non-resident). At the Ear and Throat Hospital: one house-surgeon, £70 a year; four clinical assistants (non-residents). Four non-resident appointments are in the gift of the Public Assistance Committee.

Scholarships.—There are numerous money and other awards for students of sufficient merit, among them being the following: Frank Fletcher and Catherine Fletcher Scholarships (not less than two per annum), tenable for five years, each of the annual value of £100, awarded on higher school certificate examination of the Joint Matriculation Board; the Walter Myers Travelling Studentship of £300, offered each alternate year for research work and tenable abroad; the Sands-Cox Scholarship of £42 (an entrance scholarship in the Faculty of Medicine, awarded on higher school certificate examination of the Joint Matriculation Board (July)); four Queen's Scholarships of £10 10s. each, awarded annually at the second (Part II), third, fourth, and final university examinations respectively; one or more Sydenham Scholarships, allotted on entrance to students who are the sons of deceased medical men; the Ingleby Scholarships (two) of £10 for proficiency in midwifery and diseases of women; the Arthur Foxwell Memorial Gold Medal (clinical medicine); the Sampson Gamgee Memorial Medal for surgery (Final M.B.); the Russell Memorial Prize (for examination in nervous diseases, final year); the Priestley Smith Prize in ophthalmology, value about £6 (awarded in the final examination); and the Peter Thompson Prize in anatomy (value about £6) for students in their third university year; and the John Barritt Melson Memorial Gold Medal in Physiology for students in their third university year. There is also a scholarship of £46 17s. 6d. for students proceeding to a degree in dental surgery. University Clinical Board Prizes are awarded annually as follows: Senior Medical Prize, gold medal; Senior Surgical Prize, gold medal; Midwifery Prize, gold medal; Junior Medical Prize, silver medal; Junior Surgical Prize, silver medal.

Fees.—The composition fee for university classes is £106 5s. This covers all the work required for the degrees of Birmingham and some other universities, and for the ordinary qualifications of licensing corporations, but not the additional courses required for the Fellowship of the Royal College of Surgeons of England, the diploma and degrees of the university in State medicine, and some other special work. The total cost for the six years' curriculum, including hospital and examination fees, is £246 0s. 6d. (If first-year science subjects are excluded, £208 15s. 6d.)

Other information should be sought from the Registrar, or the Dean of the Faculty of Medicine, University, Edmund Street, Birmingham.

Bristol

The school is carried on by the Faculty of Medicine of the university, and provides full instruction for all its degrees and for the diploma in dental surgery.

Clinical Instruction.—The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them more than 700 beds and extensive out-patient departments, special clinics for diseases of women and children, including ante-natal and post-natal work, also for eye, ear, nose and throat, and skin diseases, in addition to large and well-equipped departments for dental work and large outdoor maternity departments. The Bristol Royal Infirmary has now been selected by the National Radium Commission as a Radium Centre. At each of these institutions there are well-arranged pathological museums, post-mortem rooms, and laboratories for morbid anatomy. There are also laboratories for work in clinical pathology, bacteriology, and biochemistry, in which special instruction is given in these subjects. Departments are provided and well equipped for radiology, radiotherapy, actinotherapy, electrotherapy, and massage, with all forms of physiotherapy. The students of the school also attend the City and County Mental Hospital, the Ham Green Hospital for instruction in fevers and tuberculosis, the practice of the Royal Hospital for Sick Children and Women, containing 120 beds, and that of the Bristol Eye Hospital, with 40 beds. In addition, by the kind permission of the Health Committee of the Bristol City Council, students may attend the clinical practice at Southmead Hospital, and may complete under certain conditions their practical work in obstetrics at that institution, which has 672 beds. The Orthopaedic Hospital at Winford and Stoke Park Colony for Mental Defectives are also available.

Appointments.—(1) Undergraduate: Medical clerkships, surgical dresserships, also ophthalmic, obstetric, pathological, dermatological, ear, nose, and throat clerkships, are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the dressers reside in rotation free of charge. (2) Post-graduate: At the Bristol Royal Infirmary: four house-surgeons, one casualty house-surgeon, three house-physicians, one resident obstetric officer, one gynaecological and dermatological house-surgeon, one ear, nose, and throat house-surgeon, one assistant house-surgeon (who also acts in the ophthalmic department), one dental house-surgeon, and one unpaid assistant (usually a resident student) to the senior resident medical officer. All these appointments are for six months. Salary in each case at the rate of £60 per annum, with board, apartments, and laundry, except the casualty house-surgeon and the dental house-surgeon, who receive £80 per annum. In each case the salary is increased by £40 per annum if the officer is re-elected for another six months. From the resident medical officers a senior resident medical officer is appointed at a salary of £200 per annum. Clinical assistantships in all departments are open to senior qualified practitioners. At the Bristol General Hospital: senior resident medical officer, £200 per annum; casualty house-surgeon, £100 per annum; two house-physicians, £80 per annum; two house-surgeons, £80 per annum; resident obstetric officer, £80 per annum; house-surgeon to special departments, £80 per annum. All the £80 appointments carry a salary of £100 for residents who have previously held another of them; the dental house-surgeon (non-resident), £300 per annum. All these appointments are for six months, except that of senior resident medical officer, which is for two years. Clinical assistantships in the out-patient departments are also available.

Scholarships.—The following are among the scholarships and other awards open to students of the school: The Miriam Badock of the value of £120, and the H. H. Wills Science Scholarships, open to boys proceeding from Clifton College; the Harold Greenwood Memorial Scholarship of the value of £20, open to boys who have received instruction at State-provided schools in Clevedon (or elsewhere in Somerset) and subsequently at secondary schools in Somerset or Bristol; the Ashworth Hallett Scholarship, value £40, open to women only; two Martyn Memorial Pathological Scholarships of £10 each; the Tibbits Memorial Prize, value 7 guineas, for proficiency in practical surgery; the Committees' Gold and Silver Medals for fifth or sixth-year students, for general proficiency; the Augustin Prichard Prize, value about 6 guineas, for proficiency in anatomy; the Henry Clark Prize, value 11 guineas, for proficiency in gynaecology; the Crosby Leonard Prize, value 6 guineas, for proficiency in surgery; the Suple Surgical Prize, a gold medal and 7 guineas; the Suple Medical Prize, a gold medal and 7 guineas; the Henry Marshall Prize, value £12, for dressers; the H. M. Clarke Scholarship, value £15, for proficiency in surgery; the Sanders Scholarship, value £22 10s., for general proficiency; the Barrett-Roué Scholarship for proficiency in diseases of the nose, throat, and ear, or skin or eye, value £17, open to men only; Lady Haberfield Scholarship, value about 25 guineas; Bristol and Bath City Scholarships and the Scholarships offered by the counties of Gloucestershire, Somerset, Wilts, Dorset, etc., are tenable in the university.

One or more Fellowships of not less than £100 per annum are allocated by the Colston Research Society for medical research.

A Beaverbrook Fellowship, tenable for three years, is open to all members of the university holding a medical qualification.

University graduate scholarships are open to graduates of not more than one year's standing.

The Michael Hiatt Baker Scholarship of the value of £200 per annum, open to a graduate from New Zealand, may be held in the medical faculty.

The Markham Skerritt Memorial Prize is awarded every three years to that member of the university, not a member of the medical board, who, in the opinion of that board, has published the best original work during the three years.

The Paul Bush Gold Medal is awarded in alternate years to the best resident medical officer at the Bristol Royal Infirmary.

Fees.—The fee for all the courses required for the medical curriculum, including hospital practice, is 205 guineas, paid by annual instalments.

Further information as to scholarships, curricula, and fees can be obtained from the Dean of the Faculty of Medicine, or the Registrar of the University, Bristol.

University of Durham College of Medicine

This constitutes the Medical School of the Faculty of Medicine of the University of Durham, and is in the neighbouring city, Newcastle-upon-Tyne. Its classes and lectures are arranged to meet the requirements of the university in all the degrees which the latter grants in the Faculty of Medicine, and also those of the other examining bodies. Hospital practice is carried out at the Royal Victoria Infirmary, a general hospital containing more than 700 beds, where there are facilities for the study of the various special subjects. Students do their practical midwifery at the Princess Mary Maternity Hospital, which contains 90 beds, and has an annual indoor and outdoor attendance on 3,000 cases. In the Heath wing of the school itself there is a gymnasium and a set of rooms for the separate use of the students. The bacteriological department is adjacent to Armstrong College.

The Newcastle-upon-Tyne Dental Hospital and Sutherland Dental School is a component part of, and constitutes the dental department in, the College. The dental hospital, erected within the grounds of the Royal Victoria Infirmary and equipped on the best modern lines, was opened in 1931, and it is possible to undertake the whole of the dental curriculum (that is, systemic lectures, dental and general hospital practice, together with mechanical pupilage) at the College. The Dental Board of the United Kingdom recognizes the school for the purpose of granting its bursaries to students who are able to comply with the conditions laid down by the Board.

Post-Graduate Instruction.—A comprehensive series of post-graduate courses are arranged to enable practitioners to take advantage of the facilities for laboratory work and clinical study afforded by the College, the Royal Victoria Infirmary, and other associated hospitals; and in order to meet the varied requirements of practitioners there are general and special courses in the winter and summer sessions, as well as an intensive course in the summer vacation. Courses of instruction are given for the B.Hy. and D.P.H.

Students' Union.—A Students' Union has been erected and furnished at a cost of over £54,000, and is in daily use. Separate accommodation (non-residential) is provided for men and women students.

Appointments.—Assistants in the pathological department, eye department, throat and ear department, and department for skin diseases, are elected periodically. Clinical clerks and dressers are appointed every three months. Resident appointments at the Infirmary are made every six months, and each year medical and surgical registrars (who also act as tutors) are appointed from candidates who have previously held resident appointments at any recognized hospital. These latter posts afford an excellent opportunity for post-graduate study, not only at the Infirmary, but also in the departments of anatomy, physiology, pathology, and bacteriology of the College.

Scholarships.—University of Durham Entrance Scholarship, £25 a year for four years; Pears Entrance Scholarship, £40 a year for three years (awarded every third year); Heath Entrance Scholarship (from Kepier Grammar School), £60 (renewable); Province of Durham Masonic (Entrance) Scholarship, £60 (renewable); Heath Scholarship for surgery, £200, available every second year; Rutherford Morison Surgical Scholarship, £180, available every third year.

The following scholarships are tenable for one year—namely: Tulloch Scholarship for elementary biology and organic chemistry, £20; Dickinson Scholarship for medicine, surgery, midwifery, and pathology, £20; Charlton Scholarship for medicine, £25; Gibb Scholarship for pathology, £28; Luke Armstrong Scholarship for comparative pathology, £25; Stephen Scott Scholarships for anatomy and physiology, two of £50 each; Philipson Scholarships for highest marks in Final M.B., B.S. Examination, two of £45 each; Goyder Memorial Scholarship for clinical medicine and clinical surgery, interest on £325; Hamilton Drummond Memorial Scholarship, in aid of research in clinical surgery, about £50; Gibson Prize for midwifery and diseases of women and children, £10; Turnbull Prize and Silver Medal for surface anatomy; Outterson Wood Prize for psychological medicine, £10; and Sewell Memorial Prize and Silver Medal for clinical pathology. Approved applicants may obtain special grants for surgical research from the Stephen Scott Research Fund.

Fees.—The composition fee for lectures for medical students at the college is £132. Composition fee for hospital practice, £46, plus £2 2s. yearly for three years, payable to the Committee of the Royal Victoria Infirmary. For dental students the composition fees amount to £236 for the B.D.S. and to £221 for the L.D.S., covering all systematic lectures and laboratory work at the College, general and dental hospital practice, and mechanical pupilage. Other information should be sought from the Dean of the College, University of Durham College of Medicine, Newcastle-upon-Tyne.

Leeds

The School of Medicine—which is open to both male and female students—in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary, where students sufficiently advanced receive their clinical instruction. The main buildings, opened in 1894, contain excellent dissecting rooms, well-arranged laboratories for physiology, lecture theatres, and classrooms. In addition, there is a well-equipped library and reading room and a museum of anatomy. The comfort of the students is secured by means of common rooms and a refectory. Extensions of the medical school buildings were opened in October, 1930, and the Algernon Firth Institute of Pathology in April, 1933. This last houses the Departments of Pathology and Bacteriology, and Experimental Pathology and Cancer Research, including the Charles Brotherton Pathological Museum. The General Infirmary has 628 beds, and includes ophthalmic and children's wards, a large out-patient department, and the Ida and Robert Arthington Semi-convalescent Hospitals, Cookridge. The West Riding Mental Hospital at Wakefield is available for the study of mental diseases. Students also attend the practice of the Hospital for Women and the Leeds Maternity Hospital, and may attend also at the Leeds Public Dispensary.

Appointments.—Physicians' clerks and surgical dressers are appointed every six months; clerks in the children's department, orthopaedic dressers, ophthalmic and aural dressers, gynaecological ward clerks, maternity clerks, assistant physicians' clerk, dermatological clerks, assistant surgeons' dressers, dressers in the casualty rooms, junior and senior post-mortem clerks, laboratory assistants and dressers in the venereal clinic every three months. After graduation a considerable number of resident and other appointments become available in the Leeds General Infirmary, Leeds Public Dispensary, Hospital for Women and Children, West Riding Mental Hospital, etc., occupying periods of from six to twelve months at rates varying from £20 to £150 per annum.

Scholarships.—The university awards annually on the results of the first examination a scholarship in the form of free admission to the lectures and classes given in the School of Medicine. The university also awards a scholarship on the results of the second examination, of the value of £68, in the form of free admission to the clinical teaching of the Infirmary.

Fees.—It is estimated by the authorities that the approximate cost of medical education to a student in this university is £370, plus, of course, the expenses of living during the five and a half years covered by the curriculum. The composition fee for the course for the first, second, and third examinations, and for the clinical work at the Infirmary, is £242. The composition and clinical fee for those who have passed the second examination is £153.

Further information can be obtained from the Academic Subdean or Clinical Subdean, School of Medicine, Leeds.

Liverpool

The Medical School of this city is part of the university, and, owing to the enlightened liberality of several men of wealth, is exceptionally well provided with special laboratories, as well as with ordinary spacious and well-equipped classrooms and laboratories for the instruction of students proceeding to medical degrees and diplomas in special and ordinary subjects. All the laboratory and other rooms are situated close to one another and intercommunicate, together forming large blocks of buildings. The work of students throughout all stages of their career is arranged upon very satisfactory lines, and the teaching hospitals, of which a list is given below, have amalgamated to form the clinical school of the university.

The nature of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming its clinical department.

Scholarships.—The awards made each year to successful students total over £1,500. They include the following: two Holt Fellowships, one in pathology, the other in physiology; a Robert Gee Fellowship in anatomy; two John Rankin Fellowships in anatomy; a John W. Garrett International Fellowship in bacteriology; a Johnston Colonial Fellowship in biochemistry; an Ethel Boyce Fellowship in gynaecology; and a Thelwall Thomas Fellowship in surgical pathology; one Lady Jones Fellowship in orthopaedic surgery (value of Fellowships: one at £200, three at £150, two at £120, four at £100); a University Scholarship of £50, awarded on the results of Part I of the Final M.B. Examinations; a Ridgway Research Scholarship (£94); a T. J. Hughes Research Scholarship (£72); a Scholarship in mechanical dentistry of £20; two Lyon Jones Scholarships, of the annual value of £19 each for two years, awarded one on the results of the First M.B. Examination, the other on the Second M.B.; the Derby Exhibition of £15; the Clinical School Exhibition of £15; the Owen T. Williams Prize; the Torr Gold Medal in anatomy; John Rankin Exhibition in practical anatomy, £23; the George Holt Medal in physiology; the Kanthack Medal in pathology; Mitchell Banks Medal in anatomy; the Robert Gee Prize of £5 5s. in children's diseases; Mary Birrell Davies Memorial Scholarship (women), £60 per annum for four years; Robert Gee Entrance Scholarship (men), value of £42 10s. per annum for four years; Dental Operating Prizes (four); Orthodontia Prizes (two); Samuels Memorial Scholarships, three at £27 each; one Thomas H. Bickerton Prize in anatomy; Dr. N. E. Roberts Prize in zymotic diseases; Adami Prize in Pathology; Rich Prize; Ash's Prize in dental surgery, value £2 2s.; Gilmour Medal; and other entrance scholarships. In addition, a number of gold and silver medals have recently been instituted in the following subjects: pharmacology, surgery, forensic medicine and toxicology, public health, medicine, orthopaedic surgery, obstetrics and gynaecology, and laryngology and otology.

Fees.—Information as to the fees for the courses of instruction provided by the schools should be sought from the Dean of the Medical Faculty.

The Clinical School

As many as nine hospitals have combined to form the clinical school of the university, these being: the Liverpool Royal Infirmary, the David Lewis Northern Hospital, the Liverpool Royal Southern Hospital, the Liverpool Stanley Hospital, the Royal Liverpool Children's Hospital, the Women's Hospital, Liverpool, the Liverpool Maternity Hospital, the Eye and Ear Infirmary, and St. Paul's Eye Hospital. Between them they provide over 1,500 beds.

Manchester

The staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University, all the arrangements for the instruction of students, both in their earlier and their later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains 590 beds, and has associated with it a large convalescent home (132 beds) and a Central Branch Hospital (54 beds). The courses in mental diseases are partly taken in the County Mental Hospitals at Prestwich and Macclesfield. Instruction in practical gynaecology and midwifery is given at the Royal Infirmary and the St. Mary's Hospitals.

Clinical Work.—The Royal Eye Hospital, the Hospital for Diseases of the Skin, the Manchester Northern Hospital for Women and Children, the well-known Hospitals for Children at Pendlebury, and St. Mary's Hospitals for Women and Children, the Manchester Hospital for Diseases of the Ear, Monsall Fever Hospital, the Christie Cancer Hospital and Holt Radium Institute, the Hospital for Consumption and Diseases of the Throat and Chest, the Ancoats Hospital, and the Salford Royal Hospital, all make arrangements for the instruction of students.

Appointments.—The following are among the appointments open to past and present students of this school in connexion with its arrangements for clinical tuition: two pathological registrars, at £100 and £50 per annum; two medical registrars at £75 per annum; a cardiographic registrar, at £150 per annum; a medical tutor, at £30 per annum; a director of the clinical laboratory, at £400 per annum, and two assistants, at £350 and £300; three assistant medical officers, each at £35 per annum; four chief assistants to surgical units, £250 per annum; chief assistant to neuro-surgical service, £350 per annum; chief assistant to orthopaedic department, £250 per annum; medical registrar to out-patient department, £150 per annum; assistant surgical officers, aural department at £35 per annum; seven anaesthetists from £75 to £125 per annum each; three anaesthetists at central branch, £25 to £100 per annum; one resident medical officer, one year, £200 per annum; one resident surgical officer, one year, £200 per annum; three resident medical officers for Central Branch, one at £200 and two at £100 per annum; one assistant resident surgical officer, £150 per annum; one resident medical officer at the Convalescent Hospital at Cheadle, £250 per annum; two assistant medical officers to radiological departmnt, £150 and £105 per annum; medical officer, physio-therapeutic department, £150 per annum; assistant surgical officer, gynaecological department, £35 per annum; assistant to the dermatologist, £20 per annum; and three assistant surgical officers for Central Branch, £75 per annum; ten house-surgeons and eight house-physicians, appointed during the year for periods of six months, at a salary of £50 per annum. Resident officers are appointed to the gynaecological, the eye, and the ear and throat departments every three months. Clinical clerks and surgical dressers are appointed to the various departments of the hospital every three months. Non-resident clinical assistantships for qualified medical men and women, tenable for six months, at an honorarium of £35.

Entrance and other Scholarships.—The following are among the scholarships obtainable by students of the school: Rogers and Seaton Scholarships in Arts (in alternate years), £40 per annum, tenable for two years. Three Hulme Scholarships, tenable for three years, of £35, one being awarded annually for proficiency in subjects of general education. Two James Gaskill Scholarships of £35, tenable for two years, one being awarded annually for proficiency in the branches of mechanics and chemistry. A Dora Muir Scholarship, £30 per annum, tenable for three years, and open to the competition of women students only. This is awarded triennially. Sir J. P. Kay-Shuttleworth Scholarship, £30 per annum, tenable for three years, awarded triennially, open to the competition of scholars from Sedbergh School, Giggleswick School, and Burnley Grammar School; subjects—mathematics, chemistry, and mechanics. Dreschfeld Memorial Scholarship, value £20, tenable for two years and awarded triennially on the result of the Entrance Examination. John Russell Medical Entrance Scholarship, awarded annually, value £45. Two Dauntesey Junior Medical Scholarships, value £50 each, tenable for one year, for candidates who have not commenced the second year of study leading to a medical qualification; subjects—chemistry, physics, botany, and zoology. One Dauntesey Senior Medical Scholarship, £50 for one year, awarded on results of Second M.B. Examination. Two Entrance Scholarships in medicine, value 160 guineas, awarded annually for proficiency in arts or science respectively. Tom Jones Exhibition in anatomy, £25, offered annually. A Robert Platt Physiological Scholarship of £90, tenable for one year. A Leech Fellowship of £100 for original research after graduation. A Graduate Research Scholarship in medicine, value £70, tenable for one year, awarded annually for proficiency shown at Final M.B. Examination. Two Dumville Surgical Prizes, each value £15, awarded annually at graduation. The Tom Jones Memorial Surgical Fellowship, value £105, tenable for one year, usually awarded annually. The Turner Medical Prizes, value 10 guineas each, awarded annually for proficiency in certain subjects of the Final M.B., Ch.B. Examination. The John Henry Agnew Prize of £30, awarded annually for proficiency in the diseases of children. The Ashby Memorial Scholarship, tenable for one year (£100), for research in the diseases of children; offered triennially. Sidney Renshaw Prizes in physiology; offered annually (£10 and £20). Wild prize in pharmacology (£10). The John Henry Agnew Fellowship in diseases of children, £120, offered triennially. Eliza Marple Holt Post-Graduate Medical Scholarship for Women, £60 for one year, offered biennially. The details and regulations of the Dickinson Scholarships—(1) for anatomy, (2) for pathology, (3) Research Scholarship in surgery, and (4) Travelling Scholarship in medicine—may be obtained from the Secretary to the Trustees. The Morrison Watson Fellowship for research in anatomy is offered annually, value £150; also the Sheridan Delepine Fellowship in preventive medicine, value £300, is offered biennially. The Sam Gamble Scholarships—the trustees are prepared to award four scholarships of not less than £40 per annum, tenable for not more than four years, to women students who have passed the First M.B. Examination; the conditions can be obtained from the Registrar. The Knight Prize of £50 for original research in the psychological factors in the causation of mental disorder

—open to holders of the Diploma in Psychological Medicine or medical practitioners who have been registered in the university as candidates for that diploma. Pilkington Fellowship in Cancer research £300 for one year.

Fees.—The composition fee for the university course in medicine is 114 guineas for men, 112 guineas for women, payable in four instalments of 28½ and 28 guineas respectively, but this sum does not include the fee to cover the work required for the First M.B. Examination. This is £42, payable in one sum. Hospital fees are additional, and usually amount to about 90 guineas.

A prospectus and further information about the school and scholarships may be obtained from the Registrar.

Sheffield

In this city the Medical School is one of the departments of the university, being conducted and controlled by its Medical Faculty, and occupying practically the entire north wing of the quadrangle of the university buildings overlooking Weston Park. The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—are, both as regards structural arrangement and scientific equipment, on the most modern and complete lines.

For students of pathology and bacteriology there are laboratories replete with everything necessary for the most advanced work, and a large pathological museum, which is open daily. In addition, there is a large library and reading room. There are a number of recreation, athletic, and other societies, all under the management of an annually elected students' representative council, and large and comfortable common rooms for both men and women students. There are also two student unions—one for men and one for women students. Thanks to the generosity of Alderman J. G. Graves, a well-equipped union building is in course of erection, and when complete will add very materially to the amenities of the students' social life.

There is ample hostel accommodation for women students, and in the near future similar accommodation will be available for men. In the university buildings there is a refectory open to all students of the school, and a university journal is published each term; the Medical School also publishes a journal. The ordinary clinical work of the school is done at the Royal Infirmary and Royal Hospital, which have amalgamated for the purpose of clinical instruction, and provide over 800 beds for medical, surgical, and special cases, including diseases of the eye.

In addition, the Royal Infirmary has special departments for the treatment of diseases of the skin and ear, with beds assigned to them; whilst at the Royal Hospital there are special out-patient departments for diseases of the throat, ear, skin, orthopaedics, and mental diseases. The medical and surgical staffs attend daily, and give clinical instruction in the wards and out-patient rooms. Clinical lectures in medicine and surgery are given weekly. Instruction in the practical administration of anaesthetics is given at either institution by the anaesthetists, and the post-mortem examinations at both institutions are in charge of the Professor of Pathology, and afford ample material for study of this subject. Students are able to attend the practice of the Jessop Hospital for Diseases of Women and the Hospital for Sick Children, while special courses on fevers are given at the City Fever Hospital, and on mental diseases at the South Yorkshire Mental Hospital.

Appointments.—The following appointments are open to all students who have passed their examinations in anatomy and physiology: (1) casualty dresserships, (2) surgical dresserships, (3) medical clerkships, (4) pathological clerkships, (5) ophthalmic clerkships, (6) clerk to the skin department, etc. These appointments are made for three months, commencing on the first day of October, January, April, and July.

Scholarships.—Entrance Medical Scholarship, covering cost of tuition fees for a degree course in the Faculty of Medicine, open to both sexes. Six Edgar Allen Scholarships of £100 a year for three years may be held by students taking the degree course in medicine. Two Town Trustees' Scholarships, each of the value of £50 a year, tenable for three years, for boys or girls who have been educated in a Sheffield secondary school for a period not less than two years immediately preceding the examination. Four Town Trustees' Scholarships, value £50 a year, for boys or girls under 19 years of age educated in any school in Sheffield, secondary or otherwise. Town Trustees' Fellowship, value £75, tenable for one year. Mechanics' Institute Scholarship, value £50 (with remission of fees), tenable for one year, and renewable for a second year. The Frederick Clifford Scholarship, value about £50, tenable for two years. Kaye Scholarship, value £60, for proficiency in anatomy and physiology. Gold and bronze medals are also awarded for proficiency in various subjects.

Fees.—Students in the Faculty taking their complete medical course in the university pay an inclusive composition fee of £42 for each of the first five years and £28 for the sixth year. The composition fees for the dental courses are as follows: for B.D.S., first and third years, £80; second, fourth, and fifth years, £30; for L.D.S., first and second years, £80; third and fourth years, £30. The fees for special courses taken separately can be ascertained by inquiry of the Dean.

Note.—To non-British subjects—that is, students from outside the British Empire—an additional 20 per cent. will be charged on all fees.

Welsh National School of Medicine

The next session opens on October 2nd. All classes are open to both men and women students. Particulars relating to the admission of students can be obtained on application to the Provost, or to the Secretary, Welsh National School of Medicine, The Parade, Cardiff.

The following is a list of heads of departments: materia medica and pharmacology, Dr. Reginald St. A. Heathcote; pathology and bacteriology, Professor J. B. Duguid; medicine, Professor A. M. Kennedy; surgery, Professor A. W. Sheen; obstetrics and gynaecology, Professor G. I. Strachan; preventive medicine, Professor R. M. F. Picken; tuberculosis, Professor S. Lyle Cummins.

During the first three years students complete the first part of their scheme of study for the degrees of M.B., B.Ch. by taking the following courses, which also qualify for the B.Sc. degree:

(*a*) In the first year the preliminary subjects of physics, chemistry, botany, and zoology are taken. (Courses in these subjects can be taken in any of the four constituent colleges of the University of Wales.)

(*b*) In the second year the subsidiary subject of organic chemistry is taken.

(*c*) In the second and third years the ancillary subjects of human anatomy and physiology are taken. (Courses under (*b*) and (*c*) are taken at the University College of South Wales and Monmouthshire.)

SCOTLAND

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very ample, whether the student be proceeding to a university degree or to a diploma. To the descriptions of the different Scottish medical centres is in some cases added an account of hospitals which either play an official part in the education given to students as yet unqualified, or offer valuable opportunities for post-graduation work.

Aberdeen

The school is conducted by the Faculty of Medicine. This comprises twelve chairs, from which instruction is given in all the main branches of medical science—namely, biology, physics, chemistry, anatomy, physiology, materia medica, pathology, bacteriology, surgery, medicine, and midwifery. Courses of instruction in forensic medicine, public health and infectious diseases, tropical medicine, medical ethics, tuberculosis, and clinical methods are conducted by lecturers appointed by the University Court. Special opportunities for practical instruction are afforded in the laboratories and museums attached to the departments.

Clinical instruction is obtained in the Royal Infirmary, the Royal Mental Hospital, the Sick Children's Hospital, the City Fever Hospital, the General Dispensary,

Maternity, and Vaccine Institution, and the Ophthalmic Institution. Courses of practical instruction are given in diseases of children at the Sick Children's Hospital; in fevers at the City Fever Hospital; in mental diseases at the Royal Mental Hospital; in diseases of the ear, nose, and throat at the Infirmary and Dispensary; in diseases of the eye at the Infirmary and Eye Institution; in venereal diseases and diseases of the skin at the Royal Infirmary.

The degrees granted in medicine are: Doctor of Medicine (M.D.), Master of Surgery (Ch.M.), Bachelor of Medicine and Bachelor of Surgery (M.B., Ch.B.). A diploma in public health is conferred after examination on graduates in medicine of any university of the United Kingdom.

The degree of Ph.D. is also granted in this faculty.

Bursaries, scholarships, and fellowships, to the number of fifty, and of the annual value of £1,200, may be held by students of medicine in this university. The bursaries range in value from £10 to £50 per annum, and are tenable for periods from one to five years.

Fees.—An inclusive fee of 126 guineas is payable for instruction within the university, and the fee for the degrees of M.B., Ch.B. is 33 guineas. The total cost, including hospital fees, class and matriculation fees, and degree fees, is about £240.

Edinburgh

There are two Schools of Medicine: the School of the University, and the School of Medicine of the Royal Colleges of Physicians and Surgeons of Edinburgh.

THE UNIVERSITY SCHOOL.—This school, in addition to other resources of the university, has the following means of affording practical instruction: Royal Botanic Garden, Herbarium, and Museum; zoological laboratory and museum of science and art; physical laboratory; chemical laboratories; dissecting room, bone-room, and anatomical museum; physiological laboratory; medical jurisprudence laboratories; John Usher Institute of Public Health; materia medica museum and laboratory; post-mortem department of the Royal Infirmary and University Pathological and Bacteriological Laboratory; tutorial classes of practice of physic, of clinical medicine, and clinical surgery, surgery and midwifery; and the practice of certain other hospitals.

Fees.—The sessional fee for chemistry, anatomy lectures, physiology, pathology, materia medica, surgery, medicine, and midwifery is £6 6s. each. Physics, botany, zoology, forensic medicine, and public health, £5 5s. Practical zoology, practical anatomy (summer), morbid anatomy, practical materia medica, mental diseases, practical pathology, clinical midwifery, and medical entomology and parasitology, £4 4s. Experimental physiology, diseases of tropical climates, practical botany, histology, child life and health, operative surgery, clinical surgery (per term), and clinical medicine (per term), £3 3s. Practical anatomy (winter), £6 16s. 6d. Practical chemistry, £4 14s. 6d., chemical physiology, surgical pathology, and infectious diseases, £1 11s. 6d. Tuberculosis, diseases of the eye, diseases of the larynx, ear, and nose, diseases of the skin, and venereal diseases, £2 12s. 6d. Advanced bacteriology, £7 17s. 6d. Clinical gynaecology, regional anatomy, and applied anatomy, £2 2s.

Scholarships.—There are many funds for the assistance of students by means of bursaries, scholarships, exhibitions, and money awards from the beginning to the end of their undergraduate career. In addition, there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students. The value of these awards, and the conditions attaching to them, are so varied that those interested should consult the prospectus of the school itself.

THE SCHOOL OF MEDICINE OF THE ROYAL COLLEGES.—This school is composed of Lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons and in most cases also recognized by the University of Edinburgh through their *licentia docendi*; for the sake of convenience they lecture in separate buildings near to the Royal Infirmary, but form a single corporate body governed by a Board elected by the Royal Colleges of Physicians and Surgeons and by the Lecturers. This Board, with the assistance of the standing committees of the school, supervises the whole management and especially the maintenance of the efficiency and discipline of the school. The buildings at present utilized for the purposes of lecturing are the following: (1) Surgeon's Hall, Nicolson Street; (2) New School, Bristo Street. Clinical classes are held in the Royal Infirmary, Royal Maternity Hospital, and other institutions. The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session. The courses on the special subjects are also conducted by teachers specially qualified in each branch. The fees payable for class and other instruction, and including the sums payable before admission to the examination of the Conjoint Board for the triple qualification, amount to about £180. The Calendar, giving full information regarding classes and fees, can be obtained (price 9d., post free) on application to the Dean of the School, Surgeon's Hall, Edinburgh.

WOMEN STUDENTS IN EDINBURGH.—Until the close of the summer session of 1916 women students intending to proceed to graduation in the University of Edinburgh, as well as those entering for the triple qualification of the Royal Colleges of Edinburgh and Glasgow, received their training in the Edinburgh School of Medicine for Women. Now women students study under the same conditions as men, and may obtain either the university degree or the diploma of the Royal Colleges. In the university systematic lectures are given to them by the professors in the ordinary classes, which are therefore mixed. In clinical surgery, however, the women students are restricted to the wards of one charge. The particular wards are changed periodically, each of the surgeons to the Infirmary taking the women students in rotation. With few exceptions, prizes, scholarships, bursaries, and similar distinctions are open to women under the same conditions as for men. The women students also have the same privileges as in the past have been given to the men of attending classes taught by the recognized lecturers of the School of Medicine of the Royal Colleges. Most of the students' societies are open to women, with the exception of the University Union and the Royal Medical Society. Their place is taken by the Women Students' Union and the Women's Medical Society. There is also a Women's Athletic Club, with playing fields gifted to it by the university. The membership of the Royal College of Physicians and Fellowships of the two Royal Colleges are also open to women. Information on matters connected with women's studies may be obtained from the Adviser of Women Students, The University, Edinburgh.

Glasgow

THE UNIVERSITY SCHOOL FOR MEN.—The whole course of study required for graduation (M.B., Ch.B.) at the University of Glasgow can be taken here. Besides ample provision for lectures there is practical and clinical work at the hospitals; and practical courses are conducted in the laboratories of the following departments: pathology, public health, pharmacology, physiology, surgery, anatomy, chemistry, zoology, physics, and botany; the Botanic Garden and the Hunterian Museum are also open to students. Well-equipped new buildings have been provided for zoology, practical anatomy, and operative surgery, as well as for pathology. The class-rooms and laboratories for the departments of botany, physics, physiology, pharmacology, materia medica, medical jurisprudence, and public health are also of recent erection, and are elaborately equipped. In addition to the regius chairs and the chair of pathology at the university, there are chairs of medicine, surgery, obstetrics, and pathology at the Royal Infirmary; and a number of university lectureships in clinical medicine, clinical surgery, venereal diseases, laryngology, dermatology, otology, psychological medicine, tuberculosis, pathological biochemistry, and electrical diagnosis and treatment have been founded there. Other chairs have been founded at the university in bacteriology, organic chemistry, physiological chemistry, applied physics, public health, and paediatrics. There are also lectureships on the surgical

and medical diseases of children and on electrical diagnosis and therapeutics. The university, in short, has made great and successful efforts to extend and improve the accommodation of the medical departments, to strengthen the teaching staff, and to encourage post-graduation and research work. A diploma in public health is now also granted. Three very extensive general hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (600 beds), near the university, to which the Regius Professors are attached; the Royal Infirmary (824 beds); and the Victoria Infirmary (380 beds); while the Royal Mental Hospital Gartnavel (500 beds), the Royal Hospital for Sick Children (350 cots), the Royal Maternity and Women's Hospital (114 beds), the Glasgow Eye Infirmary (100 beds), the Ophthalmic Institution (35 beds), the fever hospitals at Belvidere (680 beds), Ruchill (540 beds), and Mearnskirk, and other institutions afford facilities for the practical study of special branches. The large general hospitals of the parish council are now also available for clinical instruction in medicine and surgery. Information regarding post-graduate study will be found at page 431.

Bursaries.—Bursaries confined to the Medical Faculty amount in annual value to about £1,000, while bursaries in any faculty, amounting to about the same annual sum, may be held by students of medicine, a number of both sets being open to women. Several valuable scholarships may be held by medical students who have graduated in arts.

The following bursaries are open for competition to students entering on their first session of attendance in the Faculty of Medicine: Davidson Bursary, annual value £40, tenable for four years, for students who propose before entering the Faculty of Medicine to take the degree of B.Sc. in pure science, including in their curricula anatomy and physiology. Highland Society (Glasgow) Bursaries, annual value £25 each, tenable for five years, for students of Highland descent, open to women; two bursaries vacant each year. Logan Bursary, annual value £25, tenable for four years, open to women. Robina Eckford MacBrayne Scholarship, annual value £50, tenable for three years. Marshall Bursary, annual value £24, tenable for four years. Merchants' House Bursary, annual value £35, tenable for four years, open to women. John Oliphant Bursary, annual value £35, tenable for six years. James A. Paterson Bursaries, three each year of the annual value of £35, £25, and £15 respectively, each tenable for four years; students entering their second session are also eligible; open to women; examination in mathematics and natural philosophy.

Candidates for the aforementioned bursaries must take the university general bursary competition, which is held each year in the month of June.

In addition, the following bursaries, scholarships, and prizes are open to students prosecuting their studies in the Faculty of Medicine: Arbroath Bursary, annual value £40, tenable for three years, is awarded by the Senate, on the recommendation of the Faculty of Medicine, to the student who is of the highest merit among the candidates as shown by their class records and their performances in the First and Second Professional Examinations. Arthur Bursary, annual value £20, tenable for three years, awarded to the *woman* student who takes the highest place among the Queen Margaret College candidates at the First Professional Examination. Mary Allan Bell Bursaries (five), annual value £50 each, tenable for three or four years, for students who have gone through the curriculum in arts; special examination, tenable also in theology or law. Brisbane Bursary, annual value £50, tenable for four years; candidates must be under 22 years of age, and must have taken the degree of M.A. William Gardiner Bursary, annual value £18, tenable for two years, awarded on results of the First and Second Professional Examinations in the subjects of physiology, chemistry, and physics. Dr. Thomas Gibson Bursary, annual value £50, tenable for four years; open to medical students entering on their second winter who are preparing for service as medical missionaries. Johnston Bursaries (two), annual value £25 each, tenable for three years, for eminence in the work and examinations of the first and second years of the curriculum. Lorimer Bursaries (six), value £20 each, tenable for one year, are awarded to the best students in each of the following classes: botany, zoology, physics, chemistry, anatomy, physiology. Macfarlane Bursary, annual value £40, tenable for three years, for students who have attended the first session of their professional study in the university; examination in elementary anatomy, elementary chemistry, and botany. Mackintosh Bursary, value £31, tenable for one year, open to medical students of either sex who have attended one of the courses of lectures on insanity; examination in that subject. John Monteith Bursary, annual value £21, tenable for two years, is awarded annually to the student who gains the highest number of marks in the subjects of anatomy and physiology at the professional examinations held during the previous year. Rainy Bursary, annual value £50, tenable for two years, for students entering on their third session of medical study; awarded to the candidate whose aggregate of marks in the subjects of anatomy and physiology of the Second Professional Examination, and in chemistry, botany, and zoology of the First Professional Examination, is the highest. A. and B. Stewart Bursaries, annual value £50 each, tenable for three years, for students who have gone through the arts curriculum; there is a special examination. Walton Bursary, annual value £40, tenable for four years; the Earl of Sandwich has the right of appointing to the bursary one of two students nominated by the Senate. Weir Bursary, value £25, tenable for one year, awarded on the results of the Second and Third Professional Examinations. Barbour Scholarship in anatomy or physiology, annual value £250, tenable for two years. Joseph Coats Memorial Scholarship, value £85, tenable for one year, for research in pathology, may be held concurrently with the Perman Memorial Scholarship (q.v.). Faulds Fellowship, annual value £250, tenable for three years, for medical research. Foulis Memorial Scholarship in pathology, value £50. Four McCunn Medical Research Scholarships, value £200 each, tenable for one year. Perman Memorial Scholarship, value £50, tenable for one year, for research in pathology, may be held concurrently with the Joseph Coats Memorial Scholarship (q.v.). The Junior Arnott Prize of about £15; the Senior Arnott Prize of £25. Three Bellahouston Gold Medals. The Brunton Memorial Prize of about £20. The Macewen Medal in surgery. The Captain H. S. Ranken V.C. Memorial Prize of £5. The Straits Settlements Gold Medal. The West of Scotland R.A.M.C. Memorial Prize of about £15.

The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction, under conditions given in the University Calendar, and summarized at page 404 of this issue. Scholarships and Fellowships are offered by the Carnegie Trust in science and medicine for post-graduation study.

Fees.—The matriculation fee for each year is £2 12s. 6d. In most cases the fee for each university class is £6 6s., but in some cases it is £4 4s. For hospital attendance at the Western Infirmary students pay £12 12s. for a perpetual ticket, or £1 11s. 6d. for a single term ticket, with an additional fee of £5 5s. for each winter and £2 12s. 6d. per term for each clinical course. The fees are the same at the Royal Infirmary. The university fees for the four professional examinations total £34 13s. For the whole curriculum the fees for matriculation, class attendance, hospital attendance, and professional examinations amount to about £250.

For further information apply to the Registrar, Glasgow University.

QUEEN MARGARET COLLEGE.—Includes the Women's Medical School of the University of Glasgow. The courses of study, degrees, regulations, fees, etc., are the same as for men. Women students have at Queen Margaret College reading rooms, library, and the offices of administration. They are taught in classes together with men students, and have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, the Western Infirmary, and the Victoria Infirmary; also *inter alia* in the Royal Hospital for Sick Children, the Glasgow Ear Hospital, the Royal Asylum, Gartnavel, Hawkhead Asylum, the Ophthalmic Institution, the City of Glasgow Fever Hospitals, Belvidere and Ruchill, and the Glasgow Royal Maternity and Women's Hospital.

Scholarships.—The Arthur Scholarship, annual value £20, tenable for three years. Open to competition by medical students of first year at the First Professional Examination in October, 1934. This scholarship is restricted to women medical students.

Full information can be obtained from the Dean of the Faculty of Medicine, University of Glasgow, or the Secretary to the Mistress of Queen Margaret College, University of Glasgow.

Board for Students.—University Halls of residence for women students, Queen Margaret Hall and Robertson Hall, are situated near the college and the other university buildings. The cost of board and residence is from 35s. to 42s. a week, according to accommodation. Applications to be made to the Wardens. Another residence near the college is South Park House, Ann Street, belonging to the Student Christian Movement, and open to women students in Glasgow. Cost of board is from 32s. to 35s. weekly. Applications to be made to the Warden.

ST. MUNGO'S COLLEGE.—This is the Medical School of the Royal Infirmary, which is the largest general hospital in Glasgow. The Infirmary is situated in Cathedral Square, Castle Street, and has car communication with every part of the city. St. Mungo's College is in the Infirmary grounds, and affords full courses in all the subjects of the medical curriculum, and in all the medical subjects of the dental curriculum.

The Infirmary has (including the ophthalmic department) 782 beds—542 for surgical and 240 for medical cases. There are special beds and wards for diseases of women, of the throat, nose, and ear, burns, and septic cases. In the out-patient department in 1932 over 111,000 patients were treated. In addition to the large medical and surgical departments, there are departments for special diseases—namely, diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. There is also a fully equipped electrical pavilion, with the latest and most improved apparatus for diagnosis and treatment.

Appointments.—Five house-physicians and eleven house-surgeons, who must be fully qualified, are appointed every six months, and board in the hospital free of charge. Clerks and dressers are appointed by the physicians and surgeons. As many cases of acute diseases and accidents of a varied character are received, these appointments are very valuable.

Fees.—The average class fee is £3 3s. for summer classes and £4 4s. for winter classes. The fees for all the lectures, practical classes, and hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons amount to about £120. The classes are open to male and female students.

A syllabus of classes can be obtained on application to the Secretary to the Medical Faculty, St. Mungo's College, 86, Castle Street.

THE ANDERSON COLLEGE OF MEDICINE.—This school provides education in the subjects of the curriculum for both medical and dental students. The school buildings are situated in Dumbarton Road, immediately to the west of the University and Western Infirmary. The hospital practice and clinical lectures are provided in the Western or Royal Infirmary; pathology in the Western or Royal Infirmary; vaccination and dispensary practice in the Western or Royal Infirmary Dispensary. These classes are recognized by all the licensing corporations in the United Kingdom, also by the Universities of London, Durham, Glasgow, and Edinburgh (the latter two under certain conditions stated in the School Calendar).

Fees.—The fees for the lectures and practical work required by ordinary students range between 2 and 6 guineas a class. The Carnegie Trust pays the fees of students at Anderson College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A Calendar will be sent on receipt of a postcard by the Secretary to the Medical Faculty, the Anderson College of Medicine, Glasgow, W.1, who will forward any further information which may be desired.

The Royal Samaritan Hospital for Women, Glasgow, with 160 beds, offers facilities for clinical instruction in the diseases peculiar to women. A university lectureship, the Royal Samaritan Lectureship in gynaecology, is associated with the hospital. The lecturer is Dr. Donald McIntyre. Particulars may be obtained from Mr. T. Mason Macquaker, M.A., B.L., Secretary, 191, West George Street, Glasgow.

St. Andrews and Dundee

The medical departments in these two teaching centres cater specially for students proceeding to the degrees of the University of St. Andrews, but admit other students as well. In the former city the United College provides education in all subjects for the first two years. In Dundee, University College provides for the needs of students from the beginning to the end of the five years' curriculum. Its buildings are modern, and contain fully equipped laboratories. The clinical work of the school is facilitated by various institutions. The class fees are from £6 6s. to £5 12s. 6d. for systematic classes, and from £4 14s. 6d. to £4 4s. for practical classes. The hospital ticket is £1 8s. for three months, £4 4s. a year, or perpetual, £13 6s. 8d. in one sum. The inclusive or composition fee for the curriculum is £182. In connexion with both institutions there are bursaries and scholarships of considerable value, which are awarded after competitive examination. Information as to these can be obtained from the Secretary of the University of St. Andrews. Information regarding the clinical facilities may be obtained from the Dean of the Medical Faculty, Medical School, Dundee.

Clinical Work

Good opportunities for clinical work are afforded by the Dundee Royal Infirmary, the instruction given thereat being recognized for purposes of graduation by all the Scottish universities, the University of Cambridge, the University of London, the National University of Ireland, and by the Royal Colleges of England and Scotland.

IRELAND

There is a choice of six schools for those pursuing their medical studies in Ireland. For clinical instruction the choice is equally wide and varied, though the hospitals themselves are comparatively small. Some account of the schools follows.

Dublin

School of Physic

This school is in Trinity College, Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians of Ireland, the King's professors of institutes of medicine (physiology), practice of medicine, materia medica, and midwifery being appointed by the latter. Clinical instruction is given at Sir Patrick Dun's Hospital, and some twelve other metropolitan hospitals and asylums are recognized by the Board of Trinity College. The courses of instruction are open to all medical students, whether they belong to the university or not.

The Schools of Surgery

These are schools carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons. They are formed of the college's own school, combined with two famous old medical schools—Carmichael and Ledwich; they are attached to the college by charter. The buildings contain spacious dissecting rooms, special pathological, bacteriological, and chemical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the college.

Prizes.—Among the prizes annually awarded are: The Barker Anatomical Prize (£26 5s.); the Carmichael Scholarship (£15); the Mayne Scholarship (£8); the Gold Medal in surgery; the Stoney Memorial Gold Medal in anatomy; the H. Macnaughton Jones Gold Medal for midwifery and gynaecology; the Captain Massey Miles Memorial Prize; class prizes, accompanied by silver medals, will also be given in each subject.

A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

University College, Dublin

This is one of the constituent colleges of the National University of Ireland. The arrangements for the teaching of medical students from beginning to end of the curriculum are adequate. Applications for information may be addressed to the Secretary and Bursar, University College, Dublin.

Clinical Teaching in Dublin

Two other important obstetric and gynaecological hospitals in Dublin are the Coombe Lying-in Hospital and the National Maternity Hospital. During the year ending December 31st, 1933, the number of cases dealt with in the Coombe Lying-in Hospital were as follows: intern maternity department, total admissions 1,430; intern maternity department, total deliveries 1,279; extern maternity department, total deliveries 1,517; gynaecological department, number of operations 478. Attend-

ance at pre-natal clinic, baby and general dispensaries, 12,000 cases yearly. The practice of these hospitals is attended by large numbers of students, post-graduates, and nurses.

There are numerous well-arranged hospitals in and around the city, and almost all of these are recognized for teaching purposes by the Conjoint Board of Ireland, the University of Dublin, the National University of Ireland, and by like bodies elsewhere in the British Isles. Among them are the Mater Misericordiae Hospital, with 345 beds; Dr. Steevens's Hospital at Kingsbridge, with 150; Meath Hospital and County Dublin Infirmary, with 160; Mercer's Hospital, with 120; the Royal City of Dublin Hospital, with 124; the Adelaide Hospital, with 160; the Royal Victoria Eye and Ear Hospital, with 100 beds; Sir Patrick Dun's Hospital, which has a direct connexion with the School of Physic, and the combined institutions formed by the Hardwicke Fever Hospital, the Richmond Surgical Hospital, and the Whitworth Medical Hospital, with an aggregate of 330 beds.

As for the famous Dublin medical institution known as the Rotunda Hospital, this practically consists of two distinct hospitals, and is believed to be the largest combined maternity and gynaecological hospital in the British Isles. There are pre-natal and paediatric departments as well as a thoroughly equipped pathological laboratory, biochemical laboratory, and *x*-ray apparatus. It possesses residential quarters for students, and, taken as a whole, offers exceptional opportunities for study both to ordinary students and to medical graduates of any nationality. During the year ending October 31st, 1933, there were 2,650 maternity admissions. Including patients treated in their homes, the Rotunda dealt with 4,782 maternity cases during the year, of which 4,178 were delivered.

The National Maternity Hospital is being entirely rebuilt, and the first section, containing some seventy beds, operating theatres, administration departments, and nurses' home, is now nearing completion, and will be ready for the admission of patients before the end of this year. The fittings and equipment are of the most up-to-date type, and the outstanding feature is an "all-electric" heating, sterilizing, and hot-water system. The second section, to be started early in 1935, will contain a further seventy beds, out-patient, *x*-ray, and pathological departments, laundry, lecture theatre, etc. There is accommodation for about thirty students and post-graduates, and for a nursing staff of eighty. There are gynaecological, pre-natal, and paediatric departments, both internal and external. During the year 1933 the hospital dealt with 2,185 maternity cases, of which 1,855 were delivered. In the gynaecological department 345 patients were operated on. The attendances at the out-patient department were 7,487. Clinical lectures are given daily.

Belfast

The Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete medical curriculum for all purposes. The laboratories in the departments of bacteriology, biochemistry, biology, chemistry, physiology, pathology, public health, anatomy, physics, and materia medica are all excellent, and there is a students' union which gives students the advantages of dining rooms, reading rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 300 beds, and the Mater Infirmorum Hospital, which has 150 beds. Other hospitals open to the students of the university are: the Royal Maternity Hospital; the Ulster Hospital for Women and Children; the Hospital for Sick Children; the Ophthalmic Hospital; the Benn Ulster Eye, Ear and Throat Hospital; the Union Infirmary and Fever Hospital; the Fever Hospital, Purdysburn; the District Lunatic Asylum; the Samaritan Hospital; the Forster Green Hospital for Diseases of the Chest; and the Belfast Hospital for Skin Diseases.

Scholarships.—(1) Eight, of the value of £40 each, are assigned as Entrance Scholarships in the Faculties of Arts, Science, and Medicine, tenable for one year; (2) fourteen Professional Scholarships, value from £15 to £40 each; (3) one Hutchinson Stewart Scholarship, £12, in mental diseases; (4) one Mackay Wilson Travelling Scholarship, £100, awarded triennially (next award, 1936); (5) Isabella Tod Memorial Scholarship, tenable for three years, awarded triennially to a woman student; (6) Magrath Clinical Scholarship, awarded annually, value about £112; (7) two Musgrave Studentships of £200 in physiology and pathology. There is also a post-graduate research fund, open to all graduates of not more than three years' standing. Gold medals are awarded at the M.D. examination.

Fees.—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is, approximately, £230. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmorum Hospital, and fees for the special hospitals. The course for the Conjoint Board costs about the same amount.

The Regulations of the Medical Faculty, containing full information, can be obtained on application to the Bursar, Queen's University, Belfast, price 4d.

University College, Cork

This institution, formerly known as Queen's College, Cork, is one of the constituent colleges of the National University. It holds examinations for all the faculties of that university. In addition to continuing the work which it has hitherto performed—namely, that of providing education adapted to the needs of medical students at all stages of their career. Its first aim is to fit students for the degrees of the National University, but students proceeding for the examinations of the Conjoint Board of England, Scotland, or Ireland, the Society of Apothecaries of London or the Apothecaries' Hall of Ireland, or London University, can arrange the courses of lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the college courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmaries (each 100 beds) and at the Cork Union Hospital (1,200 beds). Students can also attend the Mercy Hospital (130 beds), the County and City of Cork Lying-in Hospital, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglinton Lunatic Asylum. The session extends from October to June.

There is a Dental School in which the degree of Bachelor of Dental Surgery of the National University of Ireland can be obtained. There is a large well-equipped dental hospital in connexion with the school.

Scholarships.—About £2,500 is available annually for scholarships in the college. Particulars as to each of them can be obtained on application to the Registrar.

Fees.—The fees for the lectures and hospital attendances required by the National University of Ireland course, including examination fees, come to about £175.

Further information can be found in the Calendar, or obtained on application to the Registrar.

University College, Galway

This institution is one of the constituent colleges of the National University of Ireland, and includes Faculties of Art, Science, Law, Celtic, Engineering, Commerce, and Medicine. The college buildings are well lighted and well ventilated, and contain dissecting rooms, an anatomical theatre, and laboratories for the study of physiology, chemistry, physics, and other departments of medical science. For pathology and chemistry new laboratories are now provided. It has good grounds surrounding it, and there are many arrangements, such as a library, a college union, and an athletic union, for the benefit of those belonging to the Medical Faculty, as well as for students in other departments of the college. The clinical teaching, which is recognized as qualifying not only for the degrees of the National University, but for those of the London University and the diplomas of the various colleges in the three kingdoms, is carried on at the Galway Central Hospital and the Galway Tuberculosis Hospital. The Galway Central Hospital is a general hospital, and at the two hospitals students have ample opportunities of studying zymotic and chronic diseases. The Central Hospital has a special ward for diseases of children. Each year the governing body offers about £2,500, and the County Councils of Connaught offer about £3,500, in scholarships. These scholarships are tenable in any faculty. Additional information regarding these scholarships can be obtained on application to the Registrar, and to the Secretaries of the Connaught County Councils.

CLINICAL HOSPITALS IN ENGLAND

Many hospitals in Great Britain and Ireland, though not connected with any medical school, open their doors either to those who have yet to be qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving such instruction as opportunity offers, and at those situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, appointments for resident medical officers, house-physicians, and house-surgeons. These are usually paid offices, which may be held for periods varying from six months to a year, or even longer. Some of those situated in the great medical centres in the provinces, and in Scotland and Ireland, have already been mentioned in speaking of the medical schools in these localities; but it should be added that there are many other provincial hospitals where admirable work is done, and at which much valuable experience can be gained by both senior and junior students, and by those already qualified. Cases in point are the Royal Infirmary, Bradford; the Royal Sussex County Hospital, Brighton; the Royal United Hospital, Bath; the Worcester General Infirmary; the Kent and Canterbury Hospital; the Derbyshire Royal Infirmary; South Devon and East Cornwall Hospital, Plymouth; the Royal Albert Hospital and Eye Hospital, Devonport; the Royal Devon and Exeter Hospital; the West of England Eye Infirmary, Exeter; the Gloucestershire Royal Infirmary and Eye Institution; the Royal Infirmary, Leicester; the County Hospital, Lincoln; the General Hospital, Northampton; the Norfolk and Norwich Hospital; the General Hospital, Nottingham; the Royal Portsmouth Hospital; the Royal Berks Hospital, Reading; the Royal South Hants and Southampton Hospital; the Staffordshire General Infirmary, Stafford; the North Staffordshire Infirmary at Hartshill; the Royal Hants County Hospital, Winchester; the Wolverhampton and Staffordshire General Hospital; the County Hospital, York; and the Coventry and Warwickshire Hospital.

London Clinical Hospitals

As for the hospitals in the metropolis, so many of these take a share in the giving of clinical instruction that it is worth while to classify them.

Children's Hospitals.—There are at least seven of these, the leader among them being the Hospital for Sick Children, Great Ormond Street, which has 268 beds. There are also the East London Hospital for Children, Shadwell, with 136; the Queen's Hospital for Children, Bethnal Green, with 134; the Victoria Hospital for Children, Chelsea, with 130; the Belgrave Hospital for Children, which has a considerable out-patient department, and in-patient accommodation for 74 children; the Paddington Green Children's Hospital; and the Evelina Hospital for Sick Children, Southwark Bridge Road, with 76 beds. The largest and the oldest of the hospitals for both women and children is the Royal Waterloo Hospital for Children and Women, Waterloo Road, S.E.1.

Hospitals for Women.—Queen Charlotte's Maternity Hospital, Marylebone Road, with 100 beds and a residential college for medical students and practitioners, specializes in the teaching of midwifery. The first section of the new Queen Charlotte's Hospital in Goldhawk Road, Hammersmith, an isolation block of 30 beds for cases of puerperal fever and puerperal pyrexia, was opened in July, 1930. The Bernhard Baron Research Laboratories, immediately adjoining the isolation block, were opened towards the end of 1930, and are fully equipped and staffed. The City of London Maternity Hospital, City Road, with 71 beds, also admits medical students and graduates to its practice. Monthly or fortnightly residential courses are provided for two medical students at a time, and facilities are offered to post-graduates to see the work of the ante-natal clinics on three mornings weekly. Fees £16 16s. for four weeks, £8 8s. for two weeks (inclusive of board and residence). The Samaritan Hospital for Women, Marylebone Road, admits qualified practitioners as clinical assistants to both the in-patient and out-patient departments; demonstrations are given daily in both departments, the fees—payable in advance—being £3 3s. for three months; full particulars may be obtained from the secretary. In addition may be mentioned the Hospital for Women, Soho Square, whose teaching is confined to post-graduates in limited numbers; the Chelsea Hospital for Women, Arthur Street, Chelsea; and the Elizabeth Garrett Anderson Hospital for Women in Euston Road, the latter being in the nature of a general hospital so far as concerns the class of case treated.

Eye Hospitals.—The largest of these is the Royal London Ophthalmic Hospital (Moorfields), City Road, E.C.1, 152 beds; 3,133 in-patients, 50,074 out-patients in 1931. At this hospital two complete courses of instruction are given during the year—October to February, and March to July—comprising the following subjects: (1) anatomy (including histology and embryology), (2) physiology, (3) optics (including physiological optics), (4) refraction classes, (5) methods of examination and use of the ophthalmoscope, (6) pathology and bacteriology, (7) ophthalmic medicine and surgery, (8) ophthalmoscopic conditions, (9) operative surgery, (10) practical pathology, (11) practical bacteriology, (12) radiology, (13) physiotherapy (including ultra-violet light, diathermy, and ionization), (14) slit-lamp microscopy. A fee of 35 guineas will admit the holder once to all the lectures and classes, except those on physiotherapy and slit-lamp microscopy. The fee of a perpetual ticket to attend the practice of the hospital is £5 5s.; for three or six months, £3 3s.; for two months, £2 2s.; for one month, £1 1s. Registered medical practitioners and medical students are eligible, under certain conditions, for the posts of chief clinical assistant, clinical assistant, and junior assistant. There are also a number of salaried posts, an annual Clinical Research Scholarship of £50, and a biennial Gifford Edmonds Prize of £100. Clinical work begins each morning at 9 and operations at 10 o'clock. The course of instruction is specially adapted to meet the requirements of those reading for the D.O.M.S. and similar diplomas and degrees in ophthalmology. Further particulars may be obtained from the Dean of the Medical School. Other eye hospitals are the Royal Westminster Ophthalmic Hospital, now rebuilt on a new site in Broad Street, High Holborn, and containing 84 beds; the Royal Eye Hospital, Southwark, and the Central London Ophthalmic Hospital, Judd Street, W.C.1, each with about 40 beds; and the Western Ophthalmic Hospital with 18 beds.

Fever Hospitals.—The London County Council has under its control a number of institutions in and around London for the treatment of the more serious zymotic disorders; it makes special arrangements for the instruction of students in this subject, and grants certificates at the end of the courses. The fees for medical undergraduate and post-graduate instruction at the L.C.C. hospitals for infectious diseases and small-pox are as follows: Course in diagnosis and treatment of fevers, three guineas for two months' course. Course in clinical practice and hospital administration (for candidates for the D.P.H.), three and a half guineas for 24 demonstrations and four guineas for thirty demonstrations. Course in diagnosis and treatment of small-pox (in cases in which a fee is payable), one guinea for three demonstrations. Detailed information should be sought from the Medical Officer of Health, Special Hospitals Division, London County Council, County Hall, S.E.1.

Chest Hospitals.—The largest of these is the Brompton Hospital for Consumption, which has 333 beds and a large sanatorium at Frimley with 150 beds. There is also the City of London Hospital for Diseases of the Chest, Victoria Park, with 185 beds, and the Royal Hospital for Diseases of the Chest, City Road, with 85 beds, now amalgamated with the Royal Northern Hospital, Holloway Road.

Nose, Throat, and Ear Hospitals.—The institutions which confine their work to disorders of the throat, nose, and ear all make special arrangements for the benefit of senior and post-graduate students. They are the Metropolitan Ear, Nose, and Throat Hospital, Fitzroy Square; the Royal Ear Hospital, Huntley Street, W.C.1 (now the Ear, Nose and Throat Department of University College Hospital); the Central London Throat, Nose and Ear Hospital, Gray's Inn Road; and the Golden Square Throat, Nose and Ear Hospital, near Piccadilly Circus, W.1—the last, which possesses 101 beds, being the largest of the four institutions.

Miscellaneous Special Hospitals.—Among these are the Bethlem Royal Hospital, recently transferred from Kennington to Monks Orchard, Eden Park, Beckenham, Kent, which (like the Maudsley Hospital) confines its work to the treatment of mental diseases, and includes a department for nervous and early mental disorders; the Royal National Orthopaedic Hospital, Great Portland Street; St. Peter's Hospital for Stone and Urinary Diseases, Henrietta Street, Covent Garden; St. Mark's Hospital, City Road, which devotes itself to the treatment of diseases of the rectum, including cancer and fistula; St. Paul's Hospital, Endell Street, Holborn, W.C.2, where continuous post-graduate work in genito-urinary disease is carried on, and two regular post-graduate courses held each year; the National Hospital for Diseases of the Heart in Westmoreland Street, W.1; St. John's Hospital for Diseases of the Skin in Leicester Square; the Hospital for Diseases of the Skin, Stamford Street, Blackfriars; the National Hospital, Queen Square, W.C.1, an institution possessing 200 beds for neurological cases and a world-wide reputation; and the West End Hospital for Nervous Diseases, 73, Welbeck Street, W.1.

Detailed information as to the teaching arrangements of all these institutions may be obtained on application to their secretaries.

Women in Medicine

The regulations of the General Medical Council and of the various universities and colleges set out in previous sections apply to women as to men.

Examinations

Women are admitted to all the medical examinations of the following qualifying bodies: all the universities of Great Britain and Ireland; the Royal College of Physicians of London; the Royal College of Surgeons of England; the Society of Apothecaries of London; and the Conjoint Boards of the Colleges in Scotland and in Ireland. In addition, women are eligible for election as Fellows of the Royal College of Physicians of London, the Royal College of Physicians of Edinburgh, and the British College of Obstetricians and Gynaecologists.

Medical Education

In this country at the present time co-education is the general rule. The schools of the London hospitals have, however, so far shown themselves more conservative in this respect than the rest of the country.

In England the colleges connected with the universities of Birmingham, Bristol, Cardiff, Durham, Leeds, Liverpool, Manchester, Newcastle, and Sheffield admit women students as well as men, whilst in Scotland the universities of Aberdeen, St. Andrews, Edinburgh, and Glasgow also admit women. In Ireland all universities and colleges are open to them.

In London the only schools open to medical women students are the London School of Medicine for Women and, to a modified extent, University College Hospital and King's College Hospital, which last-named has again recently opened its doors to women students. It is felt that such a state of affairs can only be temporary, and hopes are entertained that in the near future the principle of co-education will prevail in the capital.

At the present time it will be seen that the only co-education hospitals in London are University College and King's College. The number of women entrants is restricted, but they are given excellent opportunities whilst students, and also, in fair proportion, are given opportunities of post-graduate experience as residents, house-surgeons, house-physicians, and obstetrical assistants.

Number of Women Students

Returns made to the University Grants Committee show that the total number of full-time women medical and dental students attending university institutions in England, Scotland, and Wales during recent years were:

	1925–26	1927–28	1929–30	1931–32
England	1,059	862	842	910
Wales	30	30	19	40
Scotland	313	254	275	322
Total ...	1,402	1,146	1,136	1,272

The corresponding total number of full-time male students of medicine, including dentistry, was 9,107 in 1931–2.

The London (Royal Free Hospital) School of Medicine for Women

The London (Royal Free Hospital) School was started for the training of women in medicine in the days before there were any co-education facilities for them, and it still remains by far the largest school for women. In addition to the clinical work at the Royal Free Hospital, which at present has 321 beds, arrangements are made for students of the school to obtain clinical instruction at the National Hospital for Nervous Diseases, Queen Square; the Royal London Ophthalmic Hospital, Moorfields; the Great Ormond Street Hospital for Children; the Elizabeth Garrett Anderson Hospital; the South London Hospital for Women; the Cancer Hospital; and the Central London Ophthalmic Hospital. Its importance for women in medicine can hardly be overestimated, not merely because it was the pioneer which made the way possible, but also because it is still the only general hospital in Britain which offers all its post-graduate appointments, higher and lower, to open competition by women as well as men, thus giving unique opportunity of gaining experience. Not only are all the resident appointments at the Royal Free Hospital, of which there are twenty-seven yearly, eligible for women, but, in addition, higher posts may be obtained in all the various branches of a general hospital, from those of registrar and anaesthetist to those of visiting physician or surgeon and those in charge of special departments. There is a special unit in gynaecology under a woman professor, and entirely staffed by medical women. This policy has so far not been fully adopted in its entirety by any other hospital, and it may be of interest to note in this connexion that the Royal Free Hospital has many women on its general committee and weekly board of management.

Openings for Medical Women

There are at the present time the names of over five thousand medical women on the *Medical Register*. There is an increasing demand by the public for the services of women doctors in all branches of medicine, and statistics show that the proportion of those who make good is as high as, if not somewhat higher than, that of their men colleagues.

Openings at Home

Since the number of men and women qualifying has reached normal standards, medical women find no difficulty in obtaining house appointments in the recognized teaching hospitals and in non-teaching hospitals, hospitals for women and children, sanatoriums, etc. The reorganization of hospitals under local authorities, as an outcome of the new Local Government Act, has resulted in the creation of a number of new resident appointments, senior and junior, intended to be held by medical women. In fact, the supply at the present time does not meet the demand.

General Practice.—There are good openings as assistants or, better still, as assistants with a view to admission as partners in general practice. Medical women also do very well when starting in new districts; and there is considerable scope for them in midwifery work.

Specialist and Consulting Practice.—The number of women doing specialist and consultative practice grows rapidly. There is no branch of medicine in which it is not possible for a patient to consult a medical woman. Women so specializing equip themselves by obtaining the highest essential qualifications, and it is hoped that the time is not far distant when many more women will hold positions on the honorary staffs of all hospitals. Already medical women are on the honorary staff of the Royal Free Hospital, London, and of general hospitals in a number of provincial cities. In London, Edinburgh, Glasgow, Manchester, Bristol, and Brighton there are hospitals staffed entirely by medical women, doing very fine work and meeting a real need; the latest to be opened being the Marie Curie Hospital in London for the treatment of cancer by radium. Research work also provides interesting openings, as, for example, in dealing with the special problems concerning cancer, nutrition, puerperal morbidity and mortality, statistical work, etc., and for some of these research scholarships and grants are available.

Teaching Posts.—Women hold professorships and lectureships at various universities.

Industrial Medicine.—In this branch there is much interesting work available, and it is undergoing considerable development at the present time. Several women already hold such posts.

Administrative Work.—A certain number of these important posts are admirably filled by medical women. At the Ministry of Health the department for maternity and child welfare is staffed by medical women. Medical women also hold high administrative posts under the Home Office, the Board of Education, the Board of Control, etc.

The Public Health Service.—This service provides numerous openings for medical women. It has many departments, and its rapid growth in recent years has provided much interesting work in preventive medicine. Senior departmental posts are frequently held by medical women, and several occupy posts as medical officers of health. For maternity and child welfare work women have been found to be peculiarly suited; but, by a curious economic limitation, married women, who would appear to be the most suitable of all, are, by many public authorities, excluded from service. This exclusion not only prevents married women from taking part in this work, but also prevents many of the best women from specializing in this branch of medicine, as it is obviously uneconomic to specialize in a branch of public service from which one may be excluded in a few years.

Medical Inspection, etc.—Under the Board of Education there are women serving as medical advisers and school medical inspectors. The London County Council and other important councils in the country have medical women on their permanent medical staffs, in both the senior and junior grades. The London County Council has two of its senior medical women appointed to serve as district medical inspectors. In addition, they have a large number of women medical inspectors of school children, and also women are serving as experts in the departments dealing with mental deficiency, tuberculosis, and venereal disease. Some medical women also serve as examiners of the candidates entering the public services, as, for example, the civil service. The services of medical women are extensively enlisted by public authorities in dealing with employees of their own sex. In several instances women serve as assistant medical officers to prisons. The services of medical women are also enlisted as lecturers and examiners on first aid, home nursing, health, and infant care.

Pay and Status

It is interesting to note that medical women, backed by the powerful assistance of the British Medical Association, have been on the whole successful in resisting the attempt to accept a lower salary for the same work as their men colleagues, thereby not only greatly benefiting themselves, but also maintaining the standard for the whole profession. They realize that ever since the admission of women to the medical profession exactly the same sacrifices for principle have been made by their predecessors as are now demanded from them. With the inauguration of the School Medical Service in 1908, and later when maternity and child welfare posts were created, persistent efforts were made by local authorities to pay their assistant medical officers below the minimum arranged by the representatives of the public authorities and the British Medical Association, and to secure women at a lower rate than men. With rare exceptions these efforts were a failure. Women realize as clearly as men that lowered pay invariably implies a lowered status and prestige, and that the woman who stamps herself as belonging to an inferior grade of doctor cannot complain if she is taken at her own valuation, and that a minimum always tends to become a maximum. Attempts to evade the scale and split the ranks of the profession by offering a post to a man at the agreed rate and a similar post to a woman slightly below that rate are particularly to be deprecated. Where the rule of equal pay for equal work is violated there is no limit to the extent to which women may be exploited.

Openings Abroad

Colonial Office.—To those to whom oversea service appeals it offers the possibility of useful, interesting, and adequately paid work. At present there are posts for women in Malaya, and East and West Africa. The work is almost entirely hospital and maternity and child welfare work; there have been one or two specialist appointments, such as bacteriologists, and more may follow. Women have, so far, only been appointed to the lower-grade posts, but their pay is the same as that of the men in similar grades. When placed on the permanent staff they are eligible for pension.

Egypt.—Appointments in the Kitchener Memorial Hospital, Cairo, which forms part of the Clinical Faculty of the University of Cairo, are held by women. Appointments in certain dispensaries are open to medical women. There are also posts held under the education authority, chiefly school medical inspection.

India.—See note on the Women's Medical Service for India on page 428.

Mission Field.—Missionary societies offer employment to medical women, chiefly in India, China, and the Near East.

Public Activities

Medical women are frequently appointed to serve on Royal Commissions and Government Committees dealing with medical subjects, and are also requested by them to give evidence of an expert medical nature.

Medical women have always shown considerable interest in medico-political affairs, and take an active part in the work of the British Medical Association, and with the various other societies dealing with medicine as it affects the community in general. With this end in view they also have a Medical Women's Federation, which enables them to voice a collective expression of opinion. This might otherwise be difficult to ascertain, as women are so widely scattered, both as regards their geographical distribution and their varied activities. This collective opinion of medical women has been found of great assistance by the British Medical Association and other allied societies with which it works in cordial co-operation and by whom it is frequently approached, both for information and also as a convenient means of approaching medical women as a whole.

It may be added, with regard to contributions to medical literature, that this is a branch of work in which women are more and more taking their share, and scientific and other works are frequently published by them.

WOMEN'S MEDICAL SERVICE FOR INDIA

Among careers open to medical women abroad the Women's Medical Service for India deserves honourable mention. This Service is open to fully qualified medical women of British or Indian nationality, and with the present amount of Government subsidy the number of medical officers is limited to 44.

Medical women proceeding to India to join the Women's Medical Service receive a sufficient sum for a first-class passage to India. On landing they are posted to one of the larger women's hospitals to gain Indian experience and to learn the language. For a further period they are appointed to act temporarily for medical women on furlough. They are then definitely appointed to the charge of hospitals. Private practice is allowed, provided it does not interfere with official duties. The only exception is in administrative or educational posts, when an allowance in lieu of practice is given. The amount obtained from practice varies according to the station, but in most cases it forms a fair addition to the salary, varying from £150 to £1,000 a year.

Excellent opportunities for surgery—especially gynaecological—are found in the Women's Medical Service. To those who are not keen surgeons opportunities are likely to open in the future in connexion with maternity and child welfare. Rates of pay are as follows:

Years of Service	Oversea Allowance per Mensem	Salary per Mensem	English Equivalent* per Annum
1 to 3	Rs. 100	Rs. 450	£440
4 to 6	Rs. 100	Rs. 500	£480
7 to 9	Rs. 100	Rs. 550	£520
10 to 12	Rs. 100	Rs. 600	£560
13 to 15	Rs. 150	Rs. 650	£600
16 to 18	Rs. 150	Rs. 700	£640
19 to 21	Rs. 150	Rs. 750	£680
22 to 24	Rs. 150	Rs. 800	£720
Over 24	Rs. 150	Rs. 850	£760

* At rupee value 1s. 4d.

Furnished quarters are provided, representing an additional Rs. 150 per mensem.

The cost of living in India is much higher than formerly, but it should be possible for a medical woman (with house provided) to meet actual household expenses for about Rs. 300 per mensem, leaving the remainder of her salary for dress and personal expenses. To this must be added the necessary saving to meet additional expenses for furlough and leave spent in the hills.

Leave on average pay is earned at the rate of two-elevenths of the period spent on duty.

Study leave is granted to the extent of twelve months in the total service, and will not be granted more than twice in the course of an officer's service. During study leave an officer draws half average pay, with a study allowance at the rate of 12s. a day during the course of study. Officers of European domicile are entitled to four free return first-class passages from a port in India to a port outside India in their whole service. The first passage is not granted until after the expiry of four years' approved service, and thereafter passages may be granted at intervals of not less than four years. There is a Provident Fund to which members of the Service contribute 10 per cent. of their pay. The Service contributes another 10 per cent., which accumulates at interest and is repaid on retirement.

Admission to the Service is made by selection in India and England, preference being given to those with Indian experience. Vacancies are few. Candidates in the United Kingdom should apply to the honorary secretary, United Kingdom Branch of the Countess of Dufferin's Fund, c.o. Major-General Sir John Megaw, India Office, Whitehall, London. Candidates in India should apply to the Chief Medical Officer, Women's Medical Service, Countess of Dufferin's Fund, Simla and Delhi.

Post-Graduate Study

Post-graduate students may be divided into general practitioners desirous of refresher courses, usually covering a wide field within a relatively short period of time, to bring their knowledge up to date; those who wish for instruction in special subjects with a view to obtaining one of the special diplomas or of preparing for some higher examination, perhaps with a view to promotion in one or other of the medical services, or, if already general practitioners, of adding some form of specialism to their work; and visitors, whether from the oversea Empire or from foreign countries, who wish to pursue intensive studies in special subjects or to familiarize themselves with the methods of practice in Great Britain. Further, mention may be made of medical members of the Defence Services who, for reasons similar to these, constitute an important section of post-graduate students.

It is clear that London, with the large and varied amount of material available, and with its wealth of professional skill and teaching power, offers ample opportunity for the supply of all these needs if suitable concentration and organization of effort can be brought about and established. So far, however, no definite post-graduate school of the general character and scope required has yet begun to function; though, as described below, steps have now been taken which should render this statement inaccurate by the time our next Educational Number is published. Such teaching centres as at present exist are widely scattered, and their efforts are limited and largely unsystematized. Two hospitals—the West London Hospital at Hammersmith, and the Prince of Wales's General Hospital at Tottenham—have for many years had post-graduate colleges attached to them. Their efforts are valuable and praiseworthy, but they can cater only for a limited number of general practitioners, and these largely drawn from those whose practices are within a relatively short distance of the schools. The general practitioner may also perhaps find a refresher course at the hospital at which he was trained held during a vacation, and similar short courses are organized from time to time at one or other of the London hospitals. The Fellowship of Medicine, too, arranges definite courses of study at individual hospitals; and at its office—generously placed at its disposal by the Royal Society of Medicine at 1, Wimpole Street, W.1—a list of hospitals, special and general, to which medical graduates may resort, with or without fee, is kept, and the names of the teachers at each hospital are available. Occasional courses of a more special character may thus be discovered.

There has recently been a steady increase in the demand for post-graduate instruction in the psychological aspects of medicine, and this will probably continue owing to the passage of the Mental Treatment Act and other causes. Systematic attempts to provide this are being made by at least three bodies. There are courses for the diploma in psychological medicine held at the Maudsley Hospital. Courses in mental deficiency are held once or twice yearly, organized by the Central Association for Mental Welfare in conjunction with the University of London. The Institute of Medical Psychology (formerly the Tavistock Clinic), in addition to an introductory course of about a month's duration in October, and a three months' course in the summer term, has two main courses in psychotherapeutic theory and method covering one year's work: these are open to a limited number of practitioners only—one is arranged for those who can give only three hours twice a week for this purpose; the other is for those who wish to specialize and are prepared to give a minimum of twelve hours (on three days) in the week. The Institute now has admir-

able premises at Malet Place, W.C., and such systematic teaching as that indicated has been more fully and effectively developed there.

Over and above such specialized or occasional teaching, it is possible to obtain under one roof instruction in all branches of preventive and of tropical medicine at the London School of Hygiene and Tropical Medicine, at the corner of Keppel Street and Gower Street. This institution was opened in July, 1929, and has established itself as a most valuable school of the University of London in the faculties of medicine and science. Here are university chairs in public health, bacteriology, biochemistry, epidemiology, helminthology, medical protozoology, medical entomology, and medical industrial psychology.

The principal courses of study are for the university diplomas in public health, in bacteriology, in industrial psychology, and for the diploma in tropical medicine and hygiene (Eng.) of the Conjoint Board of the Royal Colleges. Special courses of instruction are also arranged in other subjects. The course of study for the diploma in public health includes not only lectures and demonstrations on the theory and practice of public health administration and the principles of sanitary law, but also a large number of visits to places of public health interest, including centres of industrial welfare. The course of study includes also sanitary engineering, practical work under a medical officer of health, instruction in infectious disease and hospital management, and two important studies which have recently been established—namely, physiology as applied to hygiene and industry, and medical industrial psychology. The course of study for the diploma in tropical medicine and hygiene can be taken in two parts, Section A being a three months' course of laboratory and clinical instruction and Section B a two months' course in tropical hygiene, and there are special arrangements for short periods of instruction for students unable to attend the whole course. Facilities for clinical work are afforded at the Hospital for Tropical Diseases, close by. At the Seamen's Hospital, too, in co-operation with the London School of Hygiene and Tropical Medicine, post-graduate courses for ship surgeons are now held systematically. With the incorporation in this school of the Ross Institute the studies in tropical hygiene have now received a new impetus and direction.

The shortcomings of London as a post-graduate medical centre have been recognized for a long time, and it is gratifying to know that practical steps have now been taken to remedy the several disabilities that have been mentioned, and to establish under the auspices of the University of London and the London County Council, with governmental financial aid, a real post-graduate hospital and medical college which will be worthy of the metropolis of the Empire. As long ago as 1921 a committee on post-graduate medical education was set up under the chairmanship of the Earl of Athlone. The establishment of "a school attached to a hospital centrally situated in London devoted solely to post-graduate medical education as a school of the University" was the chief recommendation that resulted. In 1925 a second committee was appointed "to draw up a practical scheme of post-graduate medical education centred in London." The scheme finally suggested was to use one of the Poor Law hospitals transferred to the London County Council under the Local Government Act, 1929, as a British Post-Graduate Hospital, and to establish a fully-equipped medical school in connexion therewith. The hospital chosen for the purpose is the Hammersmith Hospital at Shepherd's Bush, which is a modern institution with, at present, 400 beds, on a site of sufficient acreage to allow of extension and of the creation of the necessary college buildings. On this site the British Post-Graduate Medical School is now in course of erection. A third committee, known as the Provisional Organization Committee, with Lord Chelmsford as chairman, reported in 1931 upon "(1) the action requisite to lead up to the planning and construction of the medical school, and (2) the form of government appropriate to the hospital and medical school with special reference to the position of the London County Council as the local authority responsible for the hospital, and to the position of the University of London in relation to the medical school." This has resulted in the approval by the King in Council of a Royal Charter constituting the Governing Body of the school and defining the functions of the governors. The Governing Body consists of representatives of various Government Departments, of the London County Council, of the University of London, and of the Royal Colleges of Physicians and Surgeons, the Society of Apothecaries, the Royal Society of Medicine, and the British Medical Association. The late Lord Chelmsford was its first chairman, and he has been succeeded by Sir Austen Chamberlain, K.G. Although the economic situation delayed developments, both the Government and the London County Council are now providing sufficient, though reduced, financial assistance. The foundation stone of the Medical School buildings was laid in July, 1933, by Mr. Neville Chamberlain, the Chancellor of the Exchequer. These buildings, with their main equipment, will, it is expected, be completed by the end of the present year. It is possible that the school may begin its actual teaching work by March 1st next. Dr. M. H. MacKeith, Dean of the Medical School of the University of Oxford, has been appointed its dean, and appointments to the professorships of medicine, of surgery, of obstetrics and gynaecology, and of pathology have also been made. Other appointments to the staff may be expected quite shortly. It is even hoped that before long the enlargement of the hospital to one of 600 beds, as contemplated by the Chelmsford Committee, may be undertaken by the London County Council. Arrangements will probably be made, also in accordance with the suggestions of that Committee, to associate the work of the Post-Graduate School and Hospital with that of some other hospitals of a special character—for example, in the spheres of psychological medicine, of neurology, and of diseases in children. No syllabus or prospectus has yet been issued, but it is understood that all classes of post-graduate students mentioned in the first paragraph of this article will be catered for. There may well be fortnightly "refresher" courses for general practitioners continuing during eight or nine months of the year, and longer courses of three months' duration for other students. Care is to be taken that no class is too large for its individual members to take full advantage of the clinical instruction provided, and it may be found possible to afford opportunity for the holding of house appointments or of clinical assistantships by a certain number of practitioners who, on the completion of their course, wish in this way to prolong their experience and association with the work of the hospital. London will thus, before long, become, as it should be, a world centre of post-graduate medical training.

In the provinces the Universities of Oxford, Cambridge, Birmingham, Bristol, Liverpool, Manchester, and Sheffield have organized courses of post-graduate work and instruction. Liverpool University has established a regular course for ship surgeons on similar lines to that already mentioned in London. Edinburgh receives graduates from many schools in the Dominions as well as in this country. In Glasgow and in Aberdeen courses are available, and, in relation with the University of St. Andrews, courses are given by the James Mackenzie Institute for Clinical Research. At many of these centres the teaching is pro-

vided by whole-time intensive courses, by part-time courses, and by means of clinical assistantships. The Joint Tuberculosis Council has provided nomadic courses in its own special subject, and a considerable number of the Divisions of the British Medical Association are now organizing post-graduate courses in their own locality.

Short particulars about the facilities for post-graduation study at present obtainable in Great Britain and Ireland are given in Section VII of the *Handbook for Recently Qualified Practitioners*, published by the British Medical Association (price 3s. 6d.).

Fellowship of Medicine and Post-Graduate Medical Association

The Fellowship of Medicine arranges regular courses in general medicine and surgery, including special departments, each lasting from one to four weeks. Courses in diseases of the chest, children, ante-natal, heart, nervous system; dermatology; gynaecology and obstetrics; proctology; orthopaedics; fractures; psychological medicine; physical therapy; rheumatism; urology; practical anaesthetic tuition; and in venereal diseases are given from time to time at the special hospitals in association with the Fellowship of Medicine. Evening clinical and pathological courses for the M.R.C.P. (three times a year) and F.R.C.S. (Final) (twice a year) are arranged also. Week-end and evening courses are arranged in many subjects. A panel of teachers is always available for clinical teaching, by arrangement with the Fellowship. Lectures and demonstrations are arranged periodically. The office of the Fellowship is, by kind permission of the Royal Society of Medicine, at No. 1, Wimpole Street, W.1 (telephone, Langham 4266). The secretary is in attendance daily from 10 a.m. to 6 p.m. (Saturday 10 a.m. to 1 p.m.). The annual subscription for membership of the Fellowship of Medicine and Post-Graduate Medical Association is £1 1s., which includes the *Post-Graduate Medical Journal*, published monthly. Courses, lectures, and demonstrations are open only to members.

Post-Graduate School of Radiotherapy

The working scheme announced in our issue of June 28th, 1930 (p. 1185), between the London Radium Institute in Riding House Street and the Mount Vernon Hospital at Northwood, for the establishment under joint control of a Post-Graduate School of Radiotherapy, continues in operation. The Dean (Sir Cuthbert Wallace) will be pleased to see prospective students by appointment. Applications for information may be addressed to the Secretary (Mr. T. A. Garner) at the School, Riding House Street, London, W.1.

West London Post-Graduate College

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The college started in 1895; it is provided with lecture, reading, writing, and class rooms, and accommodation of all sorts for the convenience of post-graduate students. The work of the college is eminently suitable for men in general practice and officers in the Services who wish to revive their general clinical knowledge.

As for ward work, the students accompany the senior staff on their visits to the wards. The out-patient department is large, and affords ample facilities for post-graduates to see and examine patients. There are the usual special departments. Post-graduates are appointed to act as clinical assistants for three or six months, no charge being made. A special clinic for the treatment of venereal diseases (male and female) is held all day. Graduates are admitted to the work of the clinic free, and certificates of satisfactory attendance and work are given.

Operations take place at 2 p.m. daily, the surgeons often availing themselves of the assistance of the graduates, and in any case making arrangements so that they can readily see what is going on. The pathological laboratory is in charge of a pathologist, who attends every day. Demonstrations are given in the morning by the assistant physicians and surgeons, and by the medical and surgical registrars.

The certificates of the school are recognized by the Admiralty, the War Office, the Colonial Office, the India Office, the University of London (for higher degrees), and the Conjoint Board. The general course is recognized as being suitable for practitioners taking a course of study under the Ministry of Health "grant-aided scheme for post-graduate study by insurance practitioners in rural areas." A prospectus can be obtained on application to the Dean.

Fees.—Hospital practice, including all ordinary demonstrations and lectures, £2 2s. for one week, £6 6s. for one month, £9 9s. for two months, £12 12s. for three months. Instruction in the administration of anaesthetics is given at the rate of £3 3s. a month.

North-East London Post-Graduate College

The headquarters of this post-graduate school are situated at the Prince of Wales's General Hospital, Tottenham, N.15, in the midst of this densely populated North London district. It contains 238 beds, and is within a few minutes' walk of South Tottenham Station on the London Midland and Scottish Railway, and Seven Sisters and Tottenham Hale Stations on the London and North-Eastern Railway. It is readily accessible by electric tram from Manor House and Hackney, and from Dalston, Edmonton, and other parts of North London. The North Middlesex Hospital, Edmonton, N.18, with upwards of 1,000 beds, has, under a recent arrangement, taken part in the clinical teaching.

The college is in association with the Fellowship of Medicine and Post-Graduate Medical Association, and is recognized by the Admiralty and India Office for the purpose of study leave, and by the University of London as a place for advanced study for the M.D. and M.S. degrees; the course of practical teaching of bacteriology is approved by the University of Cambridge for its Diploma in Public Health, and there are ample arrangements for the convenience of men who are thus working, or who, being in active practice, are desirous of getting themselves into touch with modern methods. The hospital as a whole affords excellent facilities for qualified medical practitioners who wish to take part for a time in active general hospital work; or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye, ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, radiography, the application of electricity in disease, and the administration of anaesthetics. Throughout the sessions, into which the year's work is divided, clinics, lectures, and demonstrations are given by members of the teaching staff. Operations are performed every afternoon of the week except Saturday. Special vacation or intensive courses are held at intervals throughout the year, each lasting two weeks, clinical instruction being arranged for each hour of each day. The winter session will be opened about the middle of September as regards clinical teaching.

Fees.—For the hospital practice in general medicine or surgery the fee is 5 guineas for three months or 2 guineas for one month. Provided there is accommodation in the special departments, the fees are: eye department 3 guineas; gynaecological department 5 guineas; ear, nose, and throat department 5 guineas for three months. All departments—the fee is 3 guineas for one month, 6 guineas for three months, 10 guineas for a year, and 15 guineas for a perpetual ticket.

Additional information can be obtained from the Dean of the Post-Graduate College, at the Prince of Wales's Hospital.

West End Hospital for Nervous Diseases

The post-graduate facilities of this hospital include: (1) courses of one month's duration—one hour or so daily—in common diseases of the nervous system, a number of short concentrated courses on particular subjects, and special concentrated courses for general practitioners lasting one week: the next course will be given from October

29th to November 3rd as advertised by the Fellowship of Medicine; (2) courses of instruction in psychological medicine as applied to children, in connexion with the Hospital's Child Guidance Unit; (3) a comprehensive course of instruction in speech therapy (which is acceptable to the Board of Education).

The clinical and teaching facilities of the hospital fulfil the requirements of the Examining Bodies for the Diploma in Psychological Medicine, and for the London University M.D. degree, Part III. Appointments as honorary clinical assistants (six months) and honorary clinical psychologists (twelve months) are made as required, and are open to candidates desiring facilities for the study of neurological and psychological conditions. The annual out-patient attendance is between 38,000 to 40,000 at the out-patient department, Welbeck Street, W.1. The in-patient department, Outer Circle, Gloucester Gate, Regent's Park, provides seventy-six beds, including twenty-five cots for children, and is fully equipped with a pathological laboratory and other special departments.

Manchester Post-Graduate Facilities

Courses in preparation for the diplomas in psychological medicine, in public health, bacteriology, pathology, and veterinary State medicine are arranged. There are facilities also for obtaining a certificate in venereal diseases. A limited number of clinical assistantships at the discretion of the hospitals are offered in the medical, surgical, and special departments of the Manchester Royal Infirmary, the Ancoats Hospital, and certain special hospitals for one, two, or three months, or longer. A clinical assistantship at the Radium Institute for three months is offered. Clinical teaching for post-graduates is given each Thursday during university terms by the honorary staff at Ancoats Hospital; no fee charged.

Post-Graduate Courses at Bristol

The University of Bristol provides courses of post-graduate study for practitioners. Details of set courses at the Royal Infirmary and General Hospital are announced locally. In addition, practitioners may become clinical assistants in medicine, surgery, or special subjects for periods of a month or more.

Daily Post-Graduate Study.—For those who are able to devote several hours each day to hospital practice the university offers special facilities for post-graduate work. Qualified medical practitioners may be appointed as clinical assistants for a period of one or more months. They may act as assistants, if times permit, in more than one department and in any of the hospitals during their period of study. They will be entitled to the use of the clinical laboratories and medical library, and have the right to attend in all departments, including operations, post-graduate and ordinary clinical demonstrations, and post-mortem examinations.

All inquiries and applications for admission should be addressed to the Director of Post-Graduate Studies (Clinical Section), Department of Medicine, University of Bristol.

Post-Graduate Courses at Newcastle

For the year 1934–5 the following post-graduate courses have been arranged by the College of Medicine, Newcastle-on-Tyne (University of Durham):

1. General courses in clinical medicine, surgery, and pathology at the Royal Victoria Infirmary, meeting once weekly for ten weeks. One course will be held from October to December, and one from April to June.

2. Special courses of clinical instruction meeting once weekly for ten weeks in the following subjects: gynaecology, diseases of the eye, diseases of the throat, nose, and ear, diseases of the skin, venereal diseases, neurology. Special courses in midwifery will be held at the Princess Mary Maternity Hospital.

3. An intensive course of fourteen days' duration in the summer vacation, 1935.

4. In addition to the regular post-graduate courses, practitioners may attend the ordinary medical and surgical practice of the Royal Victoria Infirmary, and also at the Princess Mary Maternity Hospital, for specified periods.

5. Classes are held at the Newcastle General Hospital for clinical instruction in medicine and surgery, or lecture-demonstrations, every Sunday morning during term. There is no fee, and all medical practitioners are invited to attend.

6. General and special courses in dental surgery are also provided in the Dental Department.

Edinburgh Post-Graduate Courses

In connexion with the University and Royal Colleges post-graduate courses are arranged every year, from about the middle of July to about the middle of September, comprising: (*a*) a course in obstetrics and gynaecology, held from July 16th to August 4th; (*b*) a course in child life and health extending from August 6th to 11th; (*c*) a general practitioner course; (*d*) a general surgical course. Courses (*c*) and (*d*) extend for four weeks from August 13th to September 8th. Similar courses are held each year.

The course in obstetrics and gynaecology includes instruction in clinical midwifery and clinical gynaecology, obstetrics and gynaecological pathology, ante-natal and post-natal clinics, etc.

The general practitioners' course includes lecture-demonstrations, and, where possible, practical instruction on medical anatomy, medical sideroom work, examination of the blood, *x*-ray and electrical therapy, morbid anatomy, and post-mortem examination; clinical instruction in medicine, surgery, gynaecology, child life and health, diseases of the skin, and infectious diseases; and special instruction in the diseases and methods of examination of the nervous, circulatory, respiratory, alimentary, and renal systems, and in diseases of the ductless glands. The general surgical course includes lecture-demonstrations on surgical anatomy, surgical pathology, and surgical *x*-ray diagnosis; clinical instruction in surgery at the Royal Infirmary and Royal Hospital for Sick Children; clinical instruction in venereal diseases; surgical out-patients, surgical and gynaecological operations, and special instruction in abdominal and genito-urinary and other branches of surgery.

A series of clinical discussions, open to all graduates, is arranged on subjects of general interest. Among the special courses also arranged at various times of the year are: examination of the blood, diseases of the ear, nose, and throat, ophthalmoscopy, venereal diseases, *x*-ray physics and electrotechnics, tuberculosis, ultra-violet radiations and their uses, the interpretation and significance of modern diagnostic methods, surgical pathology, clinical surgery, clinical medicine, urological surgery and treatment of fractures, neurological surgery, disorders of speech and voice, orthopaedic surgery, child life and health, endocrinology, diseases of the nervous system, urology.

Particulars regarding the courses, dates of commencing, fees, etc., may be had on application to the Honorary Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

Post-Graduate Medical Teaching in Glasgow

Organized post-graduate medical teaching is available in Glasgow under the auspices of the Post-Graduate Medical Association. This association represents practically all the teaching institutions in Glasgow and the various teachers giving post-graduate instruction, and its business is managed by a board elected periodically by them. The chairman of the board is Professor Sir Robert Muir. During the winter months special courses in various subjects are conducted and a number of post-graduate lectures given. From November till May there is a series of weekly demonstrations specially designed for local practitioners. Clinical courses are carried out during the summer months, and arrangements have also been made whereby a limited number of graduates may become attached to wards or out-patient departments nominally as clinical assistants for definite periods throughout the year. As such they work under the direct supervision of the physician or surgeon in charge, and carry out such detailed investigations as directed.

A general medical and surgical course is held each year during the last two weeks of August and the first two weeks of September, which is arranged to include most

of the subjects of interest to the general practitioner. This year the course is being conducted from August 20th to September 14th. The forenoons are occupied with general medicine and surgical diagnosis and minor surgery, in the Royal Infirmary and in the Victoria Infirmary. In the afternoons special subjects are dealt with in the special hospitals and in the special departments of the general hospitals, two subjects being considered most afternoons.

Further information may be had on application to Dr. James Carslaw, Secretary, Post-Graduate Medical Association, 9, Woodside Terrace, Glasgow, C.3.

Tropical Medicine

There are large and important Schools of Tropical Medicine in London and Liverpool, and the Colonial Office expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise commonly demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees is given in the paragraphs printed below. The University of London alone gives a degree (M.D.) in Tropical Medicine, and this, being an "internal degree," can only be taken by students who are medical graduates of that university. Diplomas in Tropical Medicine or Hygiene are granted by the universities of Edinburgh and Liverpool, and by the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England.

Diplomas and Degrees

LONDON UNIVERSITY.—Tropical medicine is one of the six branches in which the M.D. degree may be obtained. Candidates must normally have taken the M.B., B.S. degree not less than two years previously and must subsequently have attended a course of one academic year in tropical medicine at an approved school, or must have practised for two years in a region where tropical diseases prevail. In exceptional circumstances candidates may enter for the M.D. examination one year after taking the M.B., B.S. degree.

THE CONJOINT BOARD IN ENGLAND.—This body grants a diploma in tropical medicine and hygiene to candidates after an examination held in the months of January, April, and July. New regulations are in force, and twenty-one days' notice in writing instead of fourteen days is now required of candidates for all examinations. Section A comprises clinical tropical medicine and surgery; applied pathology, zoology, and elementary bacteriology. Section B, tropical hygiene, including epidemiology, medical zoology, and bacteriology in relation to hygiene. Candidates may enter for either or both sections provided that A is taken before B. The examination fee is nine guineas. Candidates must possess a qualification in medicine, surgery, and midwifery recognized by the Board, and produce evidence of attendance, subsequent to qualification, at courses of instruction as laid down in the regulations. The hospitals and laboratories recognized for this diploma are the London School of Hygiene and Tropical Medicine, the Royal Army Medical College, the Liverpool School of Tropical Medicine, and the School of Tropical Medicine, Calcutta. Particulars and conditions of admission to these examinations, fees, etc., may be obtained from the Secretary, Examination Hall, Queen Square, London, W.C.1.

UNIVERSITY OF LIVERPOOL.—A diploma in tropical medicine is given by this university to candidates possessing a recognized medical qualification who have attended the courses provided by the Liverpool School of Tropical Medicine and who have passed the examination held twice yearly by the university examiners. The subjects of examination are: (*a*) parasitology; (*b*) entomology; (*c*) tropical medicine, including aetiology, symptoms, pathology, diagnosis, and treatment of tropical diseases. Fee for the course, £21. A diploma in tropical hygiene (D.T.H.), open to the holders of the D.T.M., has also been established. The subjects of examination are tropical hygiene (including sanitary engineering, vital statistics and epidemiology, and applied parasitology and entomology); practical sanitation, bacteriology, chemistry (including meteorology and climatology). Fee for the course, £12 16s. Further information can be obtained from the Dean of the Faculty of Medicine, University of Liverpool.

UNIVERSITY OF EDINBURGH.—Candidates for the diploma in tropical medicine and hygiene granted by the University of Edinburgh must be graduates in medicine and surgery of that university, or hold corresponding degrees or qualifications registrable with the General Medical Council of Great Britain, or of such other universities or medical schools as may be recognized for the purpose by the University Court. The course of instruction, which commences in October, extends over two terms. The examinations (Part I and Part II) are written, oral, and practical, and are held at the end of the courses. Candidates, on the first occasion of presenting themselves for examination in either part, are required to appear for all the subjects of that part. Those who fail to pass the entire examination in either part within a period of twelve months after first appearance are required to reappear for all the subjects. The university is included in the list of institutions whose courses of instruction in tropical medicine may be taken by officers on appointment to the Colonial Medical Services or during study leave. Full particulars can be obtained from the Dean of the Faculty of Medicine, Edinburgh.

SCHOOLS

London School of Hygiene and Tropical Medicine (University of London)

(*Incorporating the Ross Institute*)

The courses of study in all branches of the work of the School will recommence in the autumn in the premises in Keppel Street (Gower Street), the gift of the Rockefeller Foundation, which has excellent laboratories and research rooms, a fine lecture theatre and class rooms, library, and museum.

The course of instruction for the diploma of the Conjoint Board in tropical medicine and hygiene is divided into two parts: Section A, a three-months' course of clinical and laboratory instruction, and Section B, a two-months' course in tropical hygiene. Each section has been so designed that it can be taken independently of the other, and the examinations by the Conjoint Board will follow closely upon the end of the corresponding course of study. This revised course is recognized by the University of London as a course for associate students.

The dates of the courses for the session 1934–5 are as follows:

Section A (*Clinical and Laboratory Instruction*).—A three-months' course, October 1st to December 21st, 1934; January 7th to March 30th, 1935; April 8th to June 28th, 1935.

Section B (*Tropical Hygiene*).—A two-months' course, January 21st to March 22nd, 1935; April 23rd to June 21st, 1935.

The course of instruction under Section A includes clinical tropical medicine, applied pathology, medical zoology, and elementary bacteriology. Section B comprises instruction in tropical hygiene, including, in relation to hygiene, bacteriology, medical zoology, anthropology, and vital and medical statistics.

There are special arrangements for short periods of instruction and also for students who are unable to attend at the beginning of a course.

The instruction in the division of clinical tropical medicine is given by the medical staff of the Hospital for

Tropical Diseases and by visiting lecturers. In this way the resources of the hospitals of the Seamen's Hospital Society at Endsleigh Gardens, at the Albert Docks, and elsewhere, become available for the clinical instruction of the students at the school.

The course of study for the diploma in public health will commence on October 1st, and will extend over a period of nine months' whole-time study. It is arranged in compliance with the requirements of the General Medical Council, and students taking the course will be able, should they so desire, to proceed to the academic diploma in public health of London University. The curriculum has been planned on very practical lines, and includes, in addition to work with medical officers of health in two selected areas, a large number of visits to places of public health interest. A series of special lectures is given by eminent authorities, and are open to members of the medical profession as well as to students of the school. The London County Council, the City of London, and various other bodies have placed their resources at the disposal of the School for teaching purposes.

The course of study for the University of London diploma in bacteriology covers a period of one academic year beginning in October, and special three-monthly courses will be given in epidemiology and vital statistics.

Special courses of study are arranged for the academic diploma in psychology (industrial) of the University of London.

Inquiries with regard to all the above-mentioned courses should be addressed to the Secretary, London School of Hygiene and Tropical Medicine, Keppel Street, Gower Street, London, W.C.1.

University of Edinburgh

A course of instruction for the diploma comprising a primary and a secondary course is given during the autumn and spring terms (October to March), and includes tropical hygiene, bacteriology, entomology, and parasitology, diseases of tropical climates (systematic and clinical), tuberculosis, and venereal diseases. The university is included in the list of institutions whose courses of instruction in tropical medicine may be taken by officers on appointment to the Colonial Medical Services or during study leave. Full particulars can be obtained from the Dean of the Faculty of Medicine.

Liverpool School of Tropical Medicine

This school is affiliated with the University of Liverpool. The university grants diplomas in tropical medicine (D.T.M.) and in tropical hygiene (D.T.H.).

Two full courses of instruction, each lasting about eleven weeks, are given every year for the D.T.M., commencing respectively October 1st, 1934, and January 3rd, 1935, and two courses for the D.T.H., beginning on January 10th and April 25th, 1935. The D.T.H. can only be taken by those who have obtained the D.T.M. Students who do not desire to take the diploma examinations held by the university at the end of each term are given a certificate if attendance has been satisfactory.

Fees.—(1) For the D.T.M. course, 20 guineas; for the D.T.H. course, 10 guineas. (2) For the diploma examinations, 5 guineas. An extra charge of one guinea is made for the use of a microscope if required.

The laboratories of the school adjoin the university and the tropical ward of the Royal Infirmary. The dimensions of the building are 162 feet in maximum length by 84 feet in width. In addition to the basement, in which are accommodated the photographic department and large storage rooms, there are four floors. The ground floor has: (1) lecture theatre, with accommodation for about seventy students; (2) library; (3) a spacious museum with preparation room adjoining. The first floor has twelve rooms, in which are housed the departments of tropical medicine and entomology. The second floor has the main class laboratory, 69 feet by 58 feet, excellently lighted; and three other rooms, devoted to the department of parasitology. The third floor has a large research laboratory and two research rooms. On the roof is an insectarium, a mosquito-proof house, and other accommodation.

Since its foundation the school has dispatched to the Tropics thirty-two scientific expeditions, many of the workers having been taken from among its students. The work done by the staff has been published in twenty-four special memoirs; in the *Annals of Tropical Medicine and Parasitology*, issued by the school; and in numerous articles in the scientific press.

The school also has a laboratory in the Tropics: the Sir Alfred Lewis Jones Tropical Laboratory in Sierra Leone, which was opened on January 10th, 1922, and is staffed by the school. Further information may be obtained from the Laboratory Secretary, School of Tropical Medicine, Pembroke Place, Liverpool, 3.

Psychological Medicine

A knowledge of psychological medicine is an essential part of a doctor's equipment; and in recent years its importance has become increasingly recognized. Its main concern may be said to be with the psychoses—that is, those mental affections which correspond more or less to what is termed insanity—but it embraces also the study of functional nervous disorders in all their varied manifestations, and it includes, in addition, the subject of mental deficiency, which, it must not be forgotten, may form the basis of either a psychosis or a psychoneurosis

The study of mental illness cannot safely be forgone. All too often a patient meets with some calamity, with all its attendant distasteful publicity, which a knowledge of the practical aspects of mental disease might well have obviated. The treatment of psychotics is the province of the psychiatrist, but their early recognition is of supreme importance; and a working knowledge of such states will afford the practitioner with the means of their detection at a stage when curative measures are most likely to meet with success. Sufferers from one or other of the functional nervous disorders are innumerable, and too many of them pass from doctor to doctor unassuaged. The intervention of the specialist may be necessary in the treatment of the severer forms of hysteria and neurosis; but many practitioners have now acquired a sufficient knowledge of such states to be able to carry out a thorough and effective system of treatment themselves.

Mental deficiency cannot escape detection in its extremer forms, but numerous higher-grade defectives, many of whom are a menace to the community by reason of their criminal propensities, escape recognition; and especially must the student who proposes to take up a career in the school medical service or in the prison service make sure that he is thoroughly grounded in this subject.

It is generally assumed that the mental expert is equally well acquainted with each of these departments of psychological medicine—the psychoses, the psychoneuroses, and mental deficiency. This, however, is seldom the case. In the past there has been too rigid a specialization, largely the outcome of administrative requirements. Recently, owing to the establishment of mental out-patient clinics, and the coming into being of the Mental Treatment Act, which gave sanction to the admission of voluntary patients into public mental hospitals, the psychiatrist's experience has been considerably enlarged; and his province has been still further widened where the authorities have elected to place the selfsame physician in charge of both the psychiatric and the mental deficiency units. It is to be hoped that this process of co-ordination will continue, and that it will eventually embrace the systematic psychological examination of prisoners or, better still, of accused persons awaiting trial.

However that may be, the medical student intending to devote himself to psychiatry will be well advised to neglect no opportunity of furthering his acquaintance with every branch of psychological medicine.

Mental Hospital Appointments

Those who take up psychiatry as a career work as medical officers of public or private mental hospitals or similar institutions. Except in the larger institutions, such as those under the control of the London County Council, where a number of the medical officers are allowed to live out if married, the medical staff are resident officers, having board, lodging, etc., either in the hospital itself or a residence in the grounds. Junior assistant medical officers receive about £350 to £450 per annum, and senior assistant medical officers about £500 to £700, in both cases with board, lodging, laundry, etc., in addition ; if married, the board, etc., is commuted for cash. As the mental hospitals are under local control the salaries vary much in different mental hospitals. Medical superintendents, whose pay commonly ranges between £800 and £1,500 per annum, are provided with a house in the grounds of the hospital, and draw various allowances.

Since the passing of the Asylums Officers Superannuation Act of 1909, doctors on the established staff of a public (county or borough) mental hospital, by paying as contributions 3 per cent. of the value of their appointments, may retire at the age of 55 (provided that they have completed twenty years' service), on a pension computed at the rate of one-fiftieth of their salary and emoluments for each completed year of service ; but inasmuch as the benefits of this Act are restricted to the public mental hospitals and are forgone on transfer to private or chartered mental hospitals, and the provision for widows is inadequate and uncertain, less inducement is offered than might be to joining the service.

Appointments to the public mental hospitals are made by the visiting committees. Promotion tends to be slow and uncertain. The higher positions are not always advertised: but in recent years there has been a general improvement in the conditions of service.

Mental hospitals are fast developing an atmosphere approximating more closely to that of the general hospitals. Whilst routine, administrative and clerical, necessarily bulks largely in mental hospital duties, there is ample material, time, and scope for purely medical work and research, and there is no branch of medicine in which research is more needed.

Instruction in Mental Disorder

Though at the present time the instruction given to the student is scarcely adequate to supply the knowledge of mental disorder requisite for the needs of the general practitioner, the facilities for the study of psychological medicine in the general hospitals are now much greater than in former years. Thus many of the teaching hospitals have out-patient departments for the treatment of mental cases, and in some of these hospitals special lectures are given in psychopathology. These facilities need not be utilized by the student, however, and the compulsory part of the curriculum is generally confined to formal lectures and a few attendances at some mental hospital. Here the student is apt to see mainly the advanced states of mental disease, and is likely to gain the impression that mental disorder is necessarily related to segregation and custody. We would therefore impress upon him the importance of attending the out-patient department for mental disorders, where he will be able to observe the mild and early cases such as he will hereafter meet with in general practice.

At the Middlesex Hospital a small number of mental cases are treated in the hospital as in-patients. This is an important move from the teaching point of view, because the student will gain true insight into the relation between mental disorder and medicine as a whole, and he will realize that it is a form of illness to be studied with other diseases and to be treated along similar lines.

In London, post-graduate courses of instruction of a comprehensive kind are given at the Maudsley Hospital and at Bethlem Hospital ; and at the National Hospital, Queen Square, courses are arranged to meet the requirements for the diploma in psychological medicine in regard to nervous diseases. Besides its ordinary post-graduate teaching in neurology the West End Hospital for Diseases of the Nervous System holds courses on common disturbances of the nervous system, and provides instruction in neurology for the D.P.M. Courses in mental deficiency are arranged by the University of London. There are also post-graduate courses at the various universities which grant diplomas of psychological medicine or of psychiatry.

There are various facilities for instruction in psychotherapy and for the study of the psychoneuroses. The Institute of Medical Psychology in London has systematic courses of instruction dealing especially with the minor forms of mental disorder which are not usually met with in the mental hospitals. At the London Child Guidance Clinic fellowships are open to medical graduates who hold a diploma in psychological medicine.

Diplomas

Those who are taking up psychiatry as a career will find it essential to obtain a diploma in psychological medicine. Such a diploma is not at present compulsory for a permanent position on the staff of all mental hospitals, but it will probably become so in course of time, just as it is now essential to obtain the D.P.H. if a career in public health is contemplated. Psychiatry is one of the branches of medicine which candidates for the M.D. degree of the Universities of London and Edinburgh can take up, and, in addition, diplomas in psychological medicine (D.P.M.), to which reference has been made, can be obtained from the Universities of London, Edinburgh, Durham, Leeds, Manchester, Dublin, and the National University of Ireland, and from the Conjoint Board in England. The requirements for a diploma differ to some extent in the various universities and colleges.

University of London (D.P.M.)

The diploma awarded by the University of London certifies that the candidate has passed the examination in psychological medicine with special knowledge of one or other of the two branches, either psychiatry or mental deficiency, special provision being made for this in Part B of the examination. The examination is held twice in each year: Part A in March and October, and Part B in April and November. Part A consists of anatomy, histology, and physiology of the nervous system (one paper and a practical examination), and psychology (one paper and an oral examination). Part B consists of neurology (one paper, and a clinical and an oral examination), and psychological medicine (two papers and a clinical and an oral examination). Paper I tests the candidate's general knowledge of both mental diseases (psychiatry) and mental deficiency, and Paper II is a special one consisting of two separate alternative sections, the first section relating to mental diseases (psychiatry), and the second section to mental deficiency. New Regulations regarding the practice required as a condition for admission to Part B of the Examination will come into force in 1935. A copy of the Regulations and of the Syllabus of Study will be sent on application to John Lea, M.A., University Extension Registrar, University of London, South Kensington, S.W.17.

Conjoint Board in England (D.P.M., R.C.P. and S.Eng.)

Both parts of the examination are held in June and December. The examination comprises the following subjects, with special regard to their relation to psychological and general medicine:—Part I: (*a*) anatomy (macroscopic and microscopic) and physiology of the nervous system ; (*b*) psychology. Part II: (*a*) clinical neurology and neuropathology ; (*b*) psychological medicine, including psychoneuroses and mental deficiency, and their legal relationships. The examination will be written and oral in Part I, and written, oral, and clinical in

Part II. No special certificates of study are required for Part I, but before entering for Part II candidates must produce certificates of: (*a*) having attended clinical instruction for at least two months at a recognized hospital for nervous diseases, or in the department for nervous diseases of a recognized general hospital; (*b*) having held a resident or whole-time appointment at an institution for mental diseases where clinical instruction is given, recognized for the purpose, for a period of six months, or having attended clinical instruction in psychological medicine at a recognized institution during twelve months. Further particulars may be obtained from the Secretary, Examination Hall, 8-11, Queen Square, London, W.C.1.

University of Edinburgh (Dipl. Psych.)

Candidates for the diploma must have held subsequent to graduation: (*a*) a resident appointment for one year in a hospital for mental disorders approved by the Faculty; or (*b*) a six months' appointment as above, and six months' practical study of nervous diseases in a special or general hospital approved by the Faculty. The examination comprises:—Part I: (1) anatomy of the nervous system; (2) physiology of the nervous system; (3) psychology and experimental psychology. Part II: (1) neuropathology; (2) psychiatry and clinical psychiatry; (3) clinical neurology; (4) an additional subject selected by the candidate from a prescribed list. Further particulars may be obtained from the Dean of the Faculty of Medicine, the University of Edinburgh.

University of Leeds (D.P.M.)

The examination is in three parts, and is written, oral, and practical. Subjects of examination:—Part I: (1) the development, anatomy, and histology (human and comparative) of the nervous system; (2) the physiology of the nervous system, and of the organs of special sense; (3) general psychology. Part II: (4) the pathology of the nervous system. Part III: (5) clinical psychiatry; (6) experimental and morbid psychology; (7) (*a*) clinical neurology; (*b*) mental hospital administration, (*c*) medico-legal aspects of insanity. Candidates, in order to pass, must satisfy the examiners in the practical and clinical parts of the examination in Parts II and III respectively. They may present themselves for the three parts of the examination separately, or at the same time, provided that no candidate shall be allowed to pass in Part II unless he has already passed in Part I, or in Part III unless he has already passed in Parts I and II. Evidence must be produced by candidates as to attendance of approved courses of instruction before they submit themselves to Part I of the examination. Particulars may be obtained from the Academic Sub-Dean, School of Medicine, Leeds.

University of Manchester (D.P.M.)

The examination is in two parts. Before presenting themselves for either part of the examination candidates must produce evidence of having attended, subsequent to qualification, certain approved courses of instruction, particulars of which may be found in the prospectus of post-graduate courses. The course of study extends over a period of three university terms, two of which must be taken in the university; the remaining term may be taken at the university, or at some approved institution. The subjects of examination are:—Part I: (1) a written and practical examination on the development, anatomy (human and comparative), and physiology of the nervous system; (2) a written and practical examination in psychology (theoretical and experimental). Part II: (1) a written and practical examination in pathology in relation to the nervous system; (2) a written, clinical, and oral examination in psychological medicine; (3) a clinical and oral examination in clinical neurology. For further information application should be made to the Dean of the Medical School, the University, Manchester.

University of Durham (D.Psy.)

The examination for the Diploma in Psychiatry consists of two parts. Part I: anatomy, physiology, pathology, and bacteriology; Part II: psychology and experimental psychology, neurology and psychiatry (systematic and clinical); and candidates may present themselves for the whole examination or for either part separately. Particulars of the courses of instruction may be had on application to the Dean, College of Medicine, University of Durham, Newcastle-on-Tyne.

University of Dublin Diploma

A post-graduate diploma in psychological medicine is conferred upon registered medical practitioners who have held a resident medical appointment at a recognized institution for the treatment of mental diseases for twelve months, or who have held such an appointment for six months and have attended clinical instruction at an approved institution for six months. Particulars of special courses of instruction may be obtained from the Registrar of the School of Physic, Trinity College, Dublin.

National University of Ireland

The National University of Ireland grants a diploma in psychological medicine. Application should be made to the Registrars of the Constituent Colleges, University College, Dublin; University College Cork; and University College, Galway, for all information as to courses, etc.

Courses of Instruction

Maudsley Hospital, London

A course of instruction for the Diploma in Psychological Medicine is given annually at the Maudsley Hospital, Denmark Hill, from January to May inclusive, the details of the last course being as follows. The course consisted of two parts. In the first part lectures on the anatomy of the nervous system were given by Professor Le Gros Clark, with practical instruction by Mr. C. Geary. A course of lectures on the physiology of the nervous system, with demonstrations in physiological psychology, was given by Dr. F. Golla; a series of lectures on biochemistry in relation to the nervous system by Dr. S. A. Mann; on theoretical and practical psychology by Dr. Henry Devine; on mental mechanisms by Dr. E. Mapother; on contemporary schools of psychology by Professor F. A. P. Aveling; and on the practical application of intelligence tests by Dr. F. C. Shrubsall. For the second part of the course lectures on the general principles of psychiatry with a series of clinical demonstrations on the same subject were given by Dr. Mapother; on psychopathology and the principles of psychotherapy by Dr. Bernard Hart; on general treatment by Dr. T. Tennent; on laboratory methods by Dr. Mann; and demonstrations on the pathology of the central nervous system by Mr. Geary. Dr. Shrubsall lectured on mental deficiency, Dr. M. Creak on mental abnormalities of children, and Dr. East on criminal insanity. Dr. Golla and Dr. James Collier gave instruction on clinical neurology, and Mr. Foster Moore on eye changes as applied to psychiatry. Dr. A. J. Lewis gave a series of demonstrations on the psychoneuroses and affective disorders. During the course a series of clinical demonstrations were arranged at the various London county mental hospitals and institutions for mental defectives. The fee for the whole course (Part I and Part II) was 15 guineas, or for either part separately 10 guineas; for one single series of lectures in Part I the fee was 4 guineas, and in Part II 2 guineas. Inquiries as to lectures, etc., should be addressed to the Director of the Central Pathological Laboratory, Maudsley Hospital, Denmark Hill, S.E.5, and as to clinical facilities to the Medical Superintendent of the Hospital.

Bethlem Royal Hospital

The Bethlem Hospital is situated at Monks Orchard, Eden Park, Beckenham, Kent, where every facility is available for the clinical study of nervous and mental disorder. The classification of patients is a prominent feature in the administration of the hospital, and treatment in all its modern and specialized aspects can be carried out at the Lord Wakefield of Hythe Treatment and Research Laboratories. When possible two courses of lectures and practical instruction for the Diploma in Psychological Medicine are given each year, in spring and autumn. These are of an intensive character, one commencing in September and completed in early December, and the other commencing in the middle of January and completed in the middle of April. Each course consists of two parts: Part A includes lectures and demonstrations on the anatomy, histology, and physiology of the nervous system, with lectures on psychology and demonstrations in experimental psychology. Part B comprises lectures and clinical demonstrations in psychology, including lectures and demonstrations in the

morbid anatomy of the nervous system ; a series of lectures, with clinical demonstrations, on different branches of psychological medicine ; and lectures, with clinical demonstrations, on mental deficiency. Entrants for the course who pay a composition fee of 15 guineas may, if due notice is given, attend either Part A or Part B of one course and postpone the other part until the next session. An entrant who wishes to attend one part only pays a fee of 10 guineas. An entrant who takes the complete course can attend the general clinical practice of the hospital on payment of 5 guineas for six months, or 10 guineas for one year, but an entrant who does not take either part of the course and desires to attend the clinical practice of the hospital must pay a fee of 5 guineas for each three months of attendance. To enable post-graduates to obtain special experience in this branch of medicine clinical assistants are appointed from time to time. Further particulars may be obtained from the Physician-Superintendent, Monks Orchard, Eden Park, Beckenham, Kent.

National Hospital, Queen Square

Special courses for the Diploma in Psychological Medicine are not held at the National Hospital, Queen Square, London, W.C.1, but lectures are given which cover all the work necessary for the more organic side of the examination—namely, anatomy, physiology, and pathology of the nervous system and clinical neurology.

The Institute of Medical Psychology

The course of training arranged by the Institute of Medical Psychology, Malet Place, London, W.C.1 (formerly the Tavistock Square Clinic for Functional Nervous Disorders) is not intended to cover the whole field of study for the Diploma in Psychological Medicine. There are post-graduate courses in psychotherapeutic theory and method. The main course, covering one year's work, is arranged for two groups: (*a*) those who can only manage to devote three hours twice a week ; (*b*) those who, with a view to specialization, are prepared to give as a minimum twelve hours a week (attending on three days). Each group is restricted to a membership of six practitioners. In addition, there is a five weeks' introductory course of lectures. This course forms part of a one-year course in psychotherapeutic theory and method, but may be attended by qualified medical practitioners who wish to take it as an isolated course of lectures. Further particulars may be obtained from the Hon. Lecture Secretary, at the Institute.

The Public Health Medical Services

The Ministry of Health is the central authority to secure the adoption and effective administration of measures conducive to the health of the people, and to promote research work and the proper training of persons for health services.

For the purpose of local public health administration the whole of England and Wales is divided into counties, county boroughs, boroughs, and urban and rural sanitary districts. The administrative County of London, exclusive of the City of London, is divided into twenty-eight metropolitan boroughs.

The public health medical services for Great Britain embrace between three and four thousand medical men and women who give whole-time services, and, in addition, a large number who give part-time services. But little more than one-third of the medical officers of health of England and Wales are whole-time officials ; but it is certain that this proportion will be considerably increased in the future, for the Ministry of Health is favourable to whole-time services, and certain provisions of the Local Government Act of 1929 will assist in this connexion. Medical officers for these services are appointed by the Ministry of Health for England ; by the corresponding Boards of Health for Scotland and Wales ; and by the many local public health authorities.

The Medical Services of the Central Authority

For England, the medical work of the Ministry of Health has been organized under the control of a Chief Medical Officer. It is subdivided into seven sections, with a senior medical officer at the head of each. About a hundred and twenty medical officers are employed, of whom rather more than one-half are regional and deputy regional medical officers employed for certain duties under the Health Insurance Acts. Briefly, the sections deal with environmental hygiene, epidemiology, and international health ; maternity and child welfare ; tuberculosis and venereal diseases ; the supervision of the food supplies ; sanitary administration in relation to infectious diseases ; national health insurance ; and the school medical service. Vacancies in the staff are advertised from time to time in the medical journals, and appointments are made by the Minister on the recommendations of a Selection Committee. These are Civil Service appointments, subject to the usual conditions as to pension, holidays, etc. Medical officers are also employed for similar services by the Welsh Board of Health (Cardiff) and the Department of Health for Scotland (Edinburgh).

The Medical Services of the Local Authorities

These appointments include: medical officers of health, tuberculosis medical officers, maternity and child welfare medical officers, venereal diseases medical officers, and school medical officers—who work in the health interests of the school child. By the larger local public health authorities assistant medical officers of health are also appointed, and these posts often serve as stepping-stones to the higher offices as vacancies, which are required to be advertised, occur.

Medical Officers of Health

The duties of the medical officer of health are: to inform himself upon all influences affecting, or threatening to affect, injuriously the public health within his district ; to adviso his sanitary authority upon all matters relating to health ; and to perform all the duties imposed upon him by statutes, by-laws, and regulations. He must prepare and submit to his local authority special and annual reports ; give immediate information to the Ministry of Health of any serious outbreak of disease ; and, subject to the instruction of his sanitary authority, direct or superintend the work of sanitary inspection.

By the Sanitary Officers Order, 1926, no person is qualified to be hereafter appointed or reappointed as a medical officer of health of any district or combination of districts unless, in addition to the qualifications prescribed by any statute, he is also either registered in the *Medical Register* as the holder of a Diploma in Public Health, Sanitary Science, or State Medicine, or has had not less than three years' previous experience of the duties of a medical officer of health.

The Public Health (Officers) Act, 1921, which was promoted by the British Medical Association, provides that a whole-time medical officer of health of a county borough or urban and rural district in England and Wales, a part of whose salary is contributed by the Exchequer, shall not be appointed for a limited period, and shall not be removed from his office except by or with the consent of the Minister of Health. This security of tenure now applies to the large majority of medical officers of health.

Under the Sanitary Officers Order, 1926, a medical officer of health who does *not* devote his whole time to the duties of his office, but a portion of whose salary is obtained from Exchequer grant, may be appointed without any limit of time ; in which case he cannot be removed from office without the consent of the Minister. If he is appointed for a specified term, say one year, he continues to hold office from year to year unless the Minister consents to his removal. Where the electing body pays the whole of the salary of such a medical officer of health he may be dismissed from office without reference to the Minister of Health.

A considerable number of authorities have now adopted the Local Government and Other Officers Superannuation

Act, 1922. Under this Act, if an officer is incapacitated by ill-health after ten years of service, or if he has reached 65 years of age, he is entitled to superannuation. Such superannuation is to be on the following scale: after ten years' service, 10/60 of the average salary which he received during the last five years of employment; after eleven years, 11/60; and so on up to a maximum of 40/60 after forty years or more of service. This Act, however, remains permissive, and it fails to make due allowance, in computing service for purposes of superannuation, for the more advanced age, as compared with other officials, at which the medical officer of health can enter the public service. In these two respects the position reached falls short of that for which the British Medical Association has been working for some years.

In Scotland the position is different in some respects. Under the Public Health (Scotland) Act, 1897, no one can be appointed as medical officer of health for any area unless he possesses the Diploma in Public Health. No medical officer can be removed from office except with the sanction of the Board of Health. A "proper" salary must be paid, and the local authority may not bring about the resignation of the officer by indirect means, such as reducing the salary or attaching new conditions to the appointment. The Act says nothing about superannuation or the age of retirement.

School Medical Officers

School medical officers are appointed by local education authorities. Primarily their duty is to detect among the children attending the public elementary schools any physical or mental defect which may retard education, and to inform the parents of its existence. Most approved schemes of medical inspection include arrangements which facilitate the task of parents in obtaining for their children the necessary treatment, check the results of this treatment, and keep each defective child under skilled observation both at home and at school until it has passed altogether out of the education authorities' hands. Indeed, it is now the practice for the education authorities themselves to provide for certain ameliorative work, notably the prescription of glasses where necessary, dental treatment, the removal of adenoids and tonsils, and treatment in connexion with certain diseases of the skin and some physical and mental defects. The general effect of all schemes alike is to make the inspection imposed by law of benefit, not merely to the individual child, but to the community at large, by preventing the development of conditions which lead to the existence of inefficient citizens among the adult population. The work is so related to that of medical officers of health that, generally, the senior school medical officer fills both appointments, his work, when necessary, being supplemented by that of whole- or part-time assistants. A diploma in public health is almost always required of those entering the school medical service.

In Scotland, while the statutory authority for the work of the school medical service is different, the scheme of work is broadly the same.

Tuberculosis Medical Officers

A tuberculosis medical officer is an officer with special training and experience in tuberculosis work, and of a suitable age and attainments to command general confidence. In England such officers are appointed by county councils and county borough councils, and their duties are to carry out the work of diagnosis of tuberculosis, to advise as to treatment, and to take charge of the work of tuberculosis dispensaries and sanatoriums where these are in operation. The work under tuberculosis schemes is co-ordinated with the general public health work of local authorities, and so the medical officer of health is often appointed as the chief tuberculosis officer when a special tuberculosis officer is on the staff of the local authority. The arrangements in Scotland are very similar. In Wales tuberculosis work is carried out under the aegis of the Welsh National Memorial Association, upon which the constituent local authorities are represented, and the powers of appointment of tuberculosis officers are vested in the Association.

Maternity and Child Welfare Medical Officers

Any local public health authority, however small, may make arrangements for maternity and child welfare work within its area, although very generally the smaller local authorities are provided for in county council schemes; but the Minister of Health may transfer the administration of the maternity and child welfare work of an area to the local education authority where this would conduce to more efficiency. For the schemes of the smaller local authorities the services of a part-time medical officer are obtained when the medical officer of health does not himself undertake the duties; but for the larger schemes special whole-time appointments are made. The maternity and child welfare medical officer is responsible for the work at the centres provided and for directing the home visitations; and these activities are closely co-ordinated with the other branches of public health work directed by the medical officer of health.

Much of this work was commenced in different parts of the country by voluntary organizations; some of it still remains in their hands, but is now fairly closely linked up with the public health local authority; and the tendency is for the whole of it to be undertaken by the local authorities. A large number of women medical officers have been appointed to these posts.

Venereal Diseases Officers

Schemes for the diagnosis and treatment of venereal diseases are provided and administered by county councils and county borough councils. In some cases the officer is on the whole-time public health staff, and in others he is a part-time official. Special knowledge and practical experience in the treatment of venereal diseases are essential. The officer appointed for either whole-time or part-time service works at one or more clinics, and also gives instruction and assistance in the treatment of venereal diseases to general practitioners, who, if they desire to obtain experience, are allowed to attend the clinics.

Remuneration in the Public Health Service

In order to ensure that public health authorities may obtain skilled and highly trained medical officers it is essential that such officers should receive salaries commensurate with their attainments, bearing a reasonable relationship to the time and money expended in fitting them for their important and responsible duties, and comparing well with the income which might be secured in other lines of medical work. With this end in view the British Medical Association and the Society of Medical Officers of Health prepared a scale of minimum commencing salaries for whole-time public health medical officers.

The scale, which was put into operation in 1925, was attended with a large measure of success. There were, however, certain aspects of it which were not entirely satisfactory. For instance, it was not retrospective, and did not, therefore, apply to medical officers who had been appointed prior to the date on which it came into force, and it contained no provision for specified increments in salary.

As the result of a series of conferences between representatives of the various Associations of Local Authorities and the British Medical Association and Society of Medical Officers of Health, under the chairmanship of Lord Askwith, a "Memorandum of Recommendations" in regard to salaries of public health medical officers was drawn up and came into force in June, 1930. This Memorandum was published in the *Supplement* to the *British Medical Journal* of July 27th, 1929 (p. 71). Copies of the Memorandum may be obtained from the Medical Secretary of the Association. It has been adopted by the Representative Body, and has been accepted by the representatives of the following bodies representing local authorities:

The Association of Municipal Corporations.
The Urban District Councils Association.
The Rural District Councils Association.
The London County Council.
The Association of Education Committees.
The Mental Hospitals Association.
The Metropolitan Boroughs Standing Joint Committee.

It has not been accepted by the county councils as a whole, but a majority of these authorities have adopted, and are applying, the Memorandum. The advertisements of local authorities which are not prepared to put into effect the whole of the Recommendations will not be published by the *British Medical Journal*, which in this matter has the co-operation of the *Lancet* and the *Medical Officer*.

The great advantage of the Memorandum is that it embodies a general agreement as to salaries and conditions of service, and is not merely a scale of salaries. It is retrospective, and will therefore benefit officers appointed before it came into force. It provides stated increments for practically all medical officials except whole-time chief, deputy, and chief assistant medical officers of health, who, as chief medical officials, may, it is presumed, depend that the commencing salaries mentioned in the agreement will be increased for meritorious work and years of service, and it contains a very valuable provision by which questions of difficulty can be referred to an advisory committee.

The British Medical Association represents the profession on the advisory committee, putting the point of view of the public health officers in the discussion of the cases of those who are receiving remuneration less than that laid down in the scale.

For the right class of practitioner with leanings in the direction of public health work the service offers an attractive career, but it must always be remembered that there are comparatively few posts which carry high salaries.

The Curriculum for the Diploma in Public Health

New Regulations and Rules of the General Medical Council for Diplomas or Degrees in Public Health came into force on October 1st, 1931.

The curriculum must extend over a period of not less than twelve calendar months (or an academic year of whole-time study covering a period of not less than nine calendar months) subsequent to the attainment of a registrable qualification.

Every candidate for Part I of the examination for the D.P.H. must produce evidence of having attended, during not less than 280 hours, at an institution approved by the licensing body granting the diploma, practical instruction in:

(*a*) Bacteriology and parasitology (including immunology, serology, medical entomology, etc.), especially in their relation to diseases of man, and to those diseases of the lower animals which are transmissible to man;

(*b*) Chemistry, physics, radiology, and electrology in relation to public health;

(*c*) Physiology and biochemistry in their application to nutrition and hygiene;

(*d*) Meteorology and climatology in relation to public health.

Every candidate for Part II must produce evidence of having received, during not less than 120 hours, at an approved institution, instruction in the following subjects:

(*a*) The principles of public health and sanitation;

(*b*) Epidemiology and vital statistics;

(*c*) Sanitary law and administration (including public medical services);

(*d*) Sanitary construction and planning.

Every such candidate must also have attended for three months on the clinical practice of a recognized hospital for infectious diseases, and have received therein instruction in the methods of administration. At least twenty-four daily attendances of not less than two hours each are required.

Every candidate for Part II must also produce evidence that he has, during a period of not less than six months, been engaged in acquiring a practical knowledge of the duties of public health administration under the supervision of a medical officer of health, who must certify that the candidate has received, during not less than three hours on each of sixty working days, practical instruction in these duties, and also those relating to:

(*a*) Maternity and child welfare service;
(*b*) Health service for children of school age;
(*c*) Venereal diseases service;
(*d*) Tuberculosis service;
(*e*) Industrial hygiene;
(*f*) Inspection and control of food, including meat and milk.

(Instruction in (*a*) to (*f*) must include attendance at the centres, clinics, institutions, and premises concerned.)

Certificates of having received this prescribed instruction in public health administration must be given by a medical officer of health who devotes his whole time to public health work; or by the medical officer of health of a sanitary area having a population of not less than 50,000; or in Ireland by the medical superintendent officer of health of a county or county borough having a population of not less than 50,000.

Regulations for the Diploma in Public Health

The Examination

The examination for the D.P.H. is divided into two parts, and no candidate is allowed to sit for the final part until after an interval of two years from the date of his obtaining a registrable medical qualification, which must be registered in the *Medical Register* before admission to Part II of the examination. The object of this two years' interval is "to provide opportunity for candidates, while passing from the state of pupilage to that of responsible practice, to give mature consideration to the obligations and duties involved in the work of the Public Health Service, and to acquire direct experience of medical work in a responsible capacity, in general medical practice, in hospital or laboratory appointments, or in any special branch of clinical work or study related to State Medicine."

The examination for Part I embraces practical, written, and oral tests in the subjects set out in the Regulations of the curriculum relating to that part; and the same is true of the examination for Part II.

A candidate must pass in all the subjects of Part I before being admitted to the examination for Part II.

Any candidate who possesses a qualification entitling him to registration on the British, Dominion, or Foreign List of the *Medical Register* can be admitted to examination, provided he has complied with the regulations of a licensing body in the United Kingdom based on the rules of the General Medical Council, and that before being admitted to Part II of the examination his qualification has been registered in the United Kingdom. Only diplomas in public health granted by approved bodies in the United Kingdom are registrable in the *Medical Register*.

Training and Examining Centres for Public Health Qualifications

Degrees in Sanitary Science are conferred, in England, by the Universities of London, Durham, Liverpool, and Birmingham; in Scotland, by the Universities of Glasgow and Edinburgh; and in the Irish Free State, by the National University of Ireland. In most cases these degrees are conferred only upon medical graduates of the universities granting them.

Whereas the requirements of the General Medical Council for the Diploma of Public Health are strictly conformed to, these requirements are extended, as a rule, as to both the period and the scope of special studies demanded, before Degrees in Sanitary Science are granted.

Most universities in Great Britain and Ireland grant a D.P.H. and provide for the necessary training.

The English and Scottish Conjoint Boards and the Irish Colleges also grant these diplomas. The School of Physic of Trinity College, Dublin, was the first body in the British Isles to arrange for courses of instruction and for a Diploma in Public Health.

At Cambridge the teaching and training courses for the D.P.H. were terminated at the end of 1931.

The post-graduate teaching and training in public health, in London, is provided mainly at one centre—the London School of Hygiene and Tropical Medicine

(University of London); the only other training centre which offers such facilities is the Royal Institute of Public Health, Queen Square, Bloomsbury, W.C.1.

The course of study for the D.P.H., as provided by the London School of Hygiene and Tropical Medicine (Keppel Street, Gower Street, London, W.C.1), which is a School of the University of London, covers a period of nine calendar months in the case of whole-time students, and is so designed that students wishing to do so can proceed to the academic diploma instituted by the University of London. The School undertakes research work in preventive medicine, and members of the public health services have a common room placed at their disposal, and are privileged to attend staff and special lectures.

The University of Manchester has a well-equipped department of bacteriology and preventive medicine, where candidates preparing for the examinations of the various university and examining boards for the Diploma in Public Health can obtain instruction. It also prepares candidates for the Diploma in Bacteriology and in Veterinary State Medicine, granted by the university. Full particulars can be obtained from the Dean of the Medical School, the University, Manchester.

The University of Edinburgh grants a Diploma in Public Health. The course, which extends over an academical year of nine months' full-time study, can be commenced in October only, and provision is made by the university for instruction in all the subjects. Candidates for the diploma must be graduates in medicine and surgery of the University of Edinburgh, or must hold corresponding degrees or registrable medical qualifications, which must be registered before a candidate is admitted to examination. The course for the diploma is divided into two parts, for each of which examinations are held twice annually. In each part the candidate must pass in all the specified subjects at one examination. Admission to the examinations is contingent upon the candidate having complied with the following conditions:

PART I.—(*a*) Completion, subsequent to obtaining a registrable medical qualification, of the course of instruction prescribed for Part I.

PART II.—(*b*) Completion, subsequent to obtaining a registrable medical qualification, of the course of instruction prescribed for Part II. (*c*) A lapse of two years after obtaining a registrable medical qualification. (*d*) Previous passage of examination in all subjects of Part I.

Further particulars can be obtained from the Dean of the Faculty of Medicine, Edinburgh.

The University of Glasgow confers the B.Sc.(P.H.) and the D.P.H., and conducts complete qualifying courses for both at its Institute of Hygiene and, for administrative work, in the Public Health Department of the city. The course for the diploma is divided into two parts, and admission to the examination is contingent upon the candidate having complied with the following conditions:

PART I.—(*a*) Completion, subsequent to obtaining a registrable medical qualification, of the course of instruction prescribed for Part I.

PART II.—(*b*) Completion, subsequent to obtaining a registrable qualification, of the course of instruction prescribed for Part II; (*c*) a lapse of two years after obtaining a registrable qualification; (*d*) previous passing of examination in all subjects of Part I.

The Royal Naval Medical College and the Royal Army Medical College provide courses of training to the medical officers of these two services.

Degrees and Diplomas in Public Health are registrable qualifications, but not so those in Tropical Medicine and Hygiene.

Qualifications in Tropical Medicine and Hygiene

The University of London grants a degree (M.D. in Tropical Medicine) to its medical graduates. A course of training is normally required, extending over at least one academic year.

Diplomas in Tropical Medicine and Hygiene are granted, in England, by the University of Liverpool and by the English Conjoint Board; and, in Scotland, by the University of Edinburgh. Among the institutions which provide qualifying courses are the London School of Hygiene and Tropical Medicine, the Liverpool School of Tropical Medicine, and the Royal Army Medical College. In the last-mentioned institution the training provided is restricted to Army medical officers. The training period for these diplomas is about six months. Graduates of medicine and surgery of recognized universities whose degrees are not registrable in this country may enter for the examination of the English Conjoint Board, and the conditions of study may be modified on the grounds of previous work in the Tropics or of original investigations undertaken.

The Colonial Office has decreed recently that the holder of a D.T.M. and H., or of a D.T.H., is eligible for appointment as a medical officer of health in places and districts other than those with large populations. In the latter cases a D.P.H. is required.

Those wishing for the details of syllabus of study, fees, date of commencement of the training courses, and the dates of examinations, etc., should apply to any of the training schools mentioned.

The Services

ROYAL NAVAL MEDICAL SERVICE

The revised regulations and conditions of service arising out of the Warren Fisher Committee Report have recently been published by the Admiralty, and it is considered that the Naval Medical Service now offers to well-qualified medical men a satisfactory career, with good opportunities for the practice of their profession and for specialization in many subjects, good pay, and the prospect of promotion to the higher ranks with an adequate pension on retirement.

Summary of New Conditions

The following information embodies the principal changes in conditions.

Entries will be on a short-service basis, and will be for an initial period of three years, to be extended to five years at the discretion of the Admiralty.

Officers leaving the Service at the end of three years will be eligible for a gratuity of £400, whilst those who leave at the end of five years will receive £1,000.

Officers may be transferred to the Permanent List at the discretion of the Admiralty on completion of five years' short service. A gratuity of £1,000 will be paid, but the officer will be required to render a minimum of twenty-five years' service in order to qualify for full pension, including seniority granted, if any, in respect of civil hospital time. With regard to the latter, ante-date of seniority of not more than one year may be allowed in respect of resident appointments in civil hospitals held prior to entry to the Royal Naval Medical Service. The ante-date will count for seniority and eligibility for increase of pay, and if the officer is transferred to the Permanent List it will count also as service for the purposes of promotion and retired pay, or gratuity on retirement.

Opportunities will be afforded for officers to specialize during the course of their career, and the number of specialist posts carrying additional emoluments has been increased from sixty to eighty-three.

The age of retirement has been increased in the case of surgeon commanders from 50 to 55, and in the case of surgeon captains from 55 to 57, thus affording officers the prospect of a longer career on full pay.

Candidates should preferably be between the ages of 24 and 28.

Medals and Prizes

Gilbert Blane Medal.—This medal is awarded annually to the surgeon lieutenant commander who obtains the highest aggregate marks at the examination for promotion to the rank of surgeon commander. The award is subject to the approval of the Presidents of the Royal Colleges of Physicians and Surgeons respectively and the Medical Director-General of the Navy.

Other awards and prizes open to naval medical officers are the Chadwick Naval Prize, the North Persian Forces Memorial Medal, and the Parkes Memorial Prize.

Pay and Allowances

(Full pay—current rates)

	Per annum £	£
Surgeon Lieutenant (short service and permanent service)	434 to	477
Surgeon Lieutenant Commander (promoted after 6 years' service)	571 to	608
Surgeon Commander (promoted after a further 6 years' service)	739 to	1,052
Surgeon Captain (promoted by selection)	1,067 to	1,314
Surgeon Rear-Admiral (promoted by selection)	1,724	
Medical Director-General	2,185	

Allowances

An outfit allowance of £50 towards cost of uniform is given.

	Per diem
Allowances when in charge of hospitals and sick quarters	10s. and 5s.
Eighty-three Specialist allowances of	5s.
Allowances to Senior Medical Officers in flag ships	5s. and 2s. 6d.

Accelerated promotion can be gained under certain conditions: provision allowance and lodging allowance are paid when victualling and accommodation are not provided. Servant's allowance is also payable in certain appointments.

The extra allowances alluded to in this table are not to be looked upon as very exceptional. About a quarter of the medical officers of the Navy are drawing extra allowances.

Pensions

Naval officers retire at certain ages according to the rank they have attained. Except for those promoted to the forty higher posts, the usual retiring age is 55 as surgeon commander, the appropriate pension according to scale being £540 per annum.

The current scale of pensions is as follows:

	Maximum Retired Pay		
Surgeon Vice-Admiral	£1,076 per annum on vacating office		
,, Rear-Admiral	£909 per annum at age of		60
,, Captain	£810	,, ,,	57
,, Commander	£540	,, ,,	55
,, Lieutenant Commander and Surgeon Lieutenant	£405	,, ,,	45

Officers permitted to withdraw receive gratuities on the following scale:—

Over 10 and under 15 years' service	£600
,, 15 ,, 18 ,, ,,	£1,800
,, 18 years' service	£2,700

The old regulation by which officers were admitted direct to the Permanent Service by examination is now abolished. No examination for entry is held, but candidates will be required to present themselves before a Selection Board at the Admiralty, presided over by the Medical Director-General of the Navy, to whom application should be made for further details.

ROYAL ARMY MEDICAL CORPS

The appointment of officers to the Royal Army Medical Corps will, in the first instance, be by means of a short-service commission for a period of five years.

In the fifth year of service an officer will be given the choice of retiring with a gratuity of £1,000 or of applying for a permanent commission. In the reorganized service, introduced as a result of the recommendations of the Warren Fisher Committee, the prospect of promotion to the higher ranks necessarily depends upon a rigid control of entry into the permanent service. It is not possible on this account to say exactly what proportion of officers who now enter the Corps will be eligible for permanent commissions, but in all probability about 50 per cent. will have the opportunity of doing so. Those retiring with a gratuity after five years' service will be liable to be called up for duty in the event of a national emergency arising during the twelve years following their retirement.

New entrants are commissioned in the rank of lieutenant, and the first three months of their service are on probation, during which time they undergo a course at the Royal Army Medical College, London, in hygiene, tropical medicine, entomology, etc., in addition to their military training at the Royal Army Medical Corps Depot at Aldershot. A grant of £50 is made for the purchase of uniform.

An entrant who is holding or who is about to hold at the time of entrance an approved whole-time appointment at a recognized civil hospital may be seconded while holding such appointment up to a maximum period of twelve months.

A candidate who has held such an appointment within six months of entry may be granted an antedate up to twelve months in respect of the period the appointment was held.

The period of secondment or antedate will not reckon in diminution of the period of five years which he is required to serve on a short-service commission, but on completing one year of actual service in the R.A.M.C. the period of secondment or antedate will count for seniority.

If appointed to a permanent commission, the period of secondment or antedate will count as service for promotion to the rank of major, increases of pay in the ranks of captain and major, and retirement on retired pay or with gratuity.

Promotion

Promotion to captain will be after one year's commissioned service on full pay. If appointed to a permanent commission promotion to the rank of major will be on completion of ten years' commissioned service. Promotion to the ranks of lieutenant-colonel and colonel will be by selection to fill vacancies within the establishment which is designed to allow promotion to those ranks on the average after seventeen and twenty-five years' service respectively.

Professional Opportunity

The possibilities for good work are very great.

There is scope for original research in tropical diseases, in preventive medicine, and in bacteriology, as well as in the large clinical field open to the specialist in medicine, surgery, gynaecology, diseases of the ear, nose, and throat, ophthalmology, and venereal diseases. Child welfare is also undertaken systematically by officers of the R.A.M.C.

Foreign Service

The tour of foreign service in India or the Mediterranean Stations is five years, that of the Colonies three years, but in the case of those officers retiring on a gratuity after five years' service, arrangements would be made for them to return to England at public expense by the end of that period.

Post-Graduate Study

A permanent commissioned officer will, between his sixth and tenth year of service, undergo a course of post-graduate study at the Royal Army Medical College and the London hospitals of five months' duration, followed by a course of study of a special subject selected by himself, provided he has shown special aptitude in the post-graduate course or during his previous service. During this course of study he remains on full pay, and the fees for the course are paid by the State.

When qualified in his special subject the officer, up to and including the rank of lieutenant-colonel, becomes entitled to specialist pay at 4s. 6d. per day when holding a specialist appointment.

Pay and Allowances: Retired Pay, etc.

The present rates of pay and allowances and retired pay are given in the following tables. In addition, an officer at home in charge of a hospital receives charge pay at the rate of 5s. a day. There are also available specialist appointments which carry with them an additional rate of pay of 4s. 6d. a day.

Rank	Pay (per annum) approx.	* Allowances (Home Rates) approx.	
		Married	Single
	£	£	£
Lieutenant	362	190	119
Captain	444	228	119
Captain after 6 years' service	493	228	119
Captain after 8 years' service	535	228	119
Major	617	232	157
Major after 13 years' service	700	232	157
Major after 16 years' service	739	232	157
Major after 18 years' service	821	232	157
Lieutenant-Colonel	946	234	186
Lieutenant-Colonel after 3 years' service as such	1,028	234	186
Colonel	1,150	268	210
Major-General	1,500	425	363

* Issuable when provision in kind is not made.

[Special rates of pay are operative for R.A.M.C. officers serving in India.]

Retired pay consists of two parts: (*a*) a service element based on the officer's total service; (*b*) a rank element for the substantive rank from which the officer retires. An officer with less than twenty complete years' service will not be eligible for retired pay on voluntary retirement.

The following are the maximum current rates of retired pay:

Rank	Yearly Rate of Retired Pay	Compulsory Retiring Age
	£	
Major	405	55
Lieutenant-Colonel	540	55
Colonel	720	57
Major-General	900	60
Lieutenant-General	1,080	60 (or on completion of tenure)

Gratuities

A short-service officer not appointed to a permanent commission may retire with a gratuity of £1,000 after five years' service as a medical officer. Such an officer is liable, during the twelve years following retirement, to be recalled to service at a time of national emergency.

Officers, holding permanent commissions, with less than twenty years' service as medical officers may be permitted to retire with gratuities in accordance with the following scale:

With less than 10 years' service as a medical officer... £1,000
After 10 years' service as a medical officer £1,500
After 15 years' service as a medical officer £2,800
After 18 years' service as a medical officer £3,500

Further Information

Entry takes place twice yearly, at the beginning of May and November.

The regulations for admission, giving full details, can be obtained from the Under Secretary of State (A.M.D.1), War Office, Whitehall, London, S.W.1, and should be carefully studied. A personal interview with a representative of the Director-General, Army Medical Services, is readily obtainable.

The Army Dental Corps

The corps is administered by the Director-General, Army Medical Services. The regulations for admission to the Army Dental Corps should be obtained from the Under Secretary of State, War Office, and carefully studied.

MEDICAL BRANCH OF THE ROYAL AIR FORCE

The establishment of the Royal Air Force Medical Branch consists partly of permanent and partly of short-service officers, and candidates are appointed after interview by the Selection Board, without competitive examination. Candidates must be under 28 years of age, be British subjects, the sons of British subjects, and of pure European descent. Before acceptance they will be required to pass a medical examination.

An officer will on first entry be granted a short-service commission for a period of three years on the active list (which may be extended to five years), followed by four years' service in the reserve, and those under 28 years of age at the time of entry will be eligible for subsequent selection for permanent commissions should they be desirous of remaining in the Service. The prospect of obtaining a permanent commission is approximately an even one so far as can reasonably be estimated at present.

Hospital appointments held since qualifying will, under certain conditions, qualify candidates for antedate of commission, the maximum age limit for appointment to a permanent commission being, if necessary, extended by a period equal to the "antedate."

Pay and Allowances

The following table shows the current rates of pay per annum for the various ranks.

In addition to pay, officers receive quarters (with fuel and light), rations and attendance, or, if these are not available in kind, they are given cash allowances in lieu as shown in the table. The rates and general scheme of allowances are subject to review as circumstances may require.

Married officers who have attained the age of 30 years receive either married quarters or allowances at the married rates.

Rank	Pay (per annum)	Allowances (per annum) (Present Home Rates)	
		Married	Single
	£	£	£
Flying-Officer...	395	—	119
Flight Lieutenant	426	228	119
Ditto, after 2 years as such	459	228	119
Ditto, after 4 years as such...	493	228	119
Squadron Leader	642	231	157
Ditto, after 2 years as such...	706	231	157
Ditto, after 4 years as such...	739	231	157
Ditto, after 6 years as such...	806	231	157
Wing Commander	903	234	186
Ditto, after 2 years as such...	937	234	186
Ditto, after 4 years as such...	1034	234	186
Group Captain	1150	306	246
Air Commodore	1314	362	307
Air Vice-Marshal	1642	423	368

Special allowances are applicable at stations abroad.

The rates of pay of the Royal Air Force Medical Branch are fixed on an inclusive basis, and the fact that specialist pay and charge pay are not payable as separate emoluments was taken into account when the rates were fixed.

At about five years' service all permanent officers who are judged suitable will be given the opportunity to take a course of specialist study. The period allowed will vary with the subject of study, but normally about nine months will be available to each officer; during which full pay and allowances will be issued. Their subsequent career will normally be as follows. Approximately three-quarters of the employment of squadron leaders and senior flight lieutenants is in specialized posts, though these are not generally of a full-time specialist character. On reaching the rank of wing commander the policy is to allow a proportion of officers to become permanent specialists and to be employed continuously throughout the remainder of their career in full-time specialist posts. Rather more than a quarter of the officers will become permanent specialists and continue to be employed as such throughout their service in the ranks of wing commander and group captain. In addition, there are a number of hygiene posts in the former rank open to specialists in that subject, bringing the proportion of specialist posts in the rank up to nearly a half of the total posts. In the rank of group captain, apart from the posts already mentioned as available for the permanent specialist, employment is nearly equally divided between posts in charge of a large hospital and headquarter administrative posts. This statement indicates the position as regards specialist employment as at present foreseen. No guarantee can be given, of course, that the career of an individual will necessarily conform to the forecast.

New entrants into the Medical Branch of the R.A.F. will be commissioned as flying officers (Medical), and will be eligible for promotion to the rank of flight lieutenant (Medical) after one year's service on full pay. Officers selected for permanent commissions will normally be promoted to the rank of squadron leader after ten years' total service. Accelerated promotion may be granted to officers qualified to hold specialist appointments after the completion of eight years' service. Promotion within establishment to the ranks of wing commander and above will be by selection.

The number of permanent commissions granted yearly is regulated with a view to all suitable permanent officers being promoted to wing commander and of a substantial majority of wing commanders being promoted to group captain. While the aim is to give entrants a career as above, no guarantee of promotion can be given to the individual officer, of course, since the number of vacancies for promotion must depend on the requirements of the Service from time to time.

Outfit Allowance

An officer who has not previously held a commission in H.M. Forces will receive an outfit allowance of £50 on joining.

Gratuities

Short-service officers who complete their full period of service on the active list will normally be granted gratuity as follows on transfer to the reserve:

After 3 completed years £400
After 5 completed years £1,000

Permanent officers who are allowed to retire voluntarily before qualifying for retired pay will normally be granted gratuity as follows:

After 5 but less than 10 years' commissioned service ...	£1,000
After 10 but less than 15 years' commissioned service ...	£1,500
With 15 or more than 15 years' commissioned service ...	£2,800

Retired Pay

The minimum period of service qualifying for retirement on retired pay is twenty years. The maximum current rates of retired pay and the compulsory retiring ages for the several ranks are:

Rank	Yearly Rate of Retired Pay	Compulsory Retiring Age
	£	
Air Vice-Marshal	904	60
Air Commodore	855	57
Group Captain	810	57
Wing Commander...	540	55
Squadron Leader	450	55

Further particulars may be obtained on application to the Secretary, Air Ministry (D.M.S.), Adastral House, Kingsway, W.C.2.

INDIAN MEDICAL SERVICE

Pending a decision on the main constitutional issues now under consideration, the future of the Indian Services necessarily remains in doubt, and the Indian Medical Service is no exception to the general rule. The conditions of service actually in force in the I.M.S. at the present time are in the main those accepted by the Association in 1928. It was made clear at that time that, while the I.M.S. would be retained primarily to meet the needs of the Indian Army, provincial Governments would be required to employ a stated number of officers from the Service, in order to maintain the necessary minimum war reserve and to provide European medical attendance for European officers of the higher civil services and their families. A certain number of civil posts under the Government of India and the provincial Governments were therefore retained and reserved for officers of the Service, some being open to Europeans and Indians, others to Europeans only; these posts are actually so reserved under existing regulations. It is difficult to say to what extent Indian constitutional reform, which is now the subject of consideration by Parliament, may affect officers of the Indian Medical Service.

Intending candidates should clearly bear this position in mind, and they should also recognize that while they will be liable, if appointed, for military or civil employment as required, they should confine their attention to the prospects afforded by the military side of the Service, which has medical charge of the Indian Army, and which at present offers wide opportunities of professional experience, including clinical, preventive, specialist, and research work.

It should be borne in mind also that the pensions of officers of the Indian Medical Service are charged not on British but on Indian revenues.

Conditions of Service

European candidates for admission to the I.M.S. must be British subjects under 32 years of age, and must be registered under the Medical Acts in Great Britain and Northern Ireland. A gratuity of £1,000 on retirement after six years' service, or £2,500 after twelve years' service, together with free return passages, is offered.

Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General.

Owing to the state of financial emergency at present prevailing in India, the existing monthly rates of pay (for European officers in the Service who have a "non-Asiatic" domicile), which are as follows, are being subjected, under the authority of the Secretary of State in Council, to a temporary deduction not exceeding 5 per cent.:

Rank	Service in Rank	Basic Pay	Overseas Pay	Year of Total Service
1	2	3	4	5
		Rs.	Rs.	
Lieutenant	... ...	500	150	1st
Captain ...	(i) During first 3 years' service as Captain	650	150	2nd
			150	3rd
			150	4th
	(ii) With more than 3 and less than 6 years' service as Captain	750	£15	5th
			£15	6th
			£25	7th
			£25	8th
	(iii) With more than 6 years' service as Captain	850	£25	9th
			£25	10th
			£25	11th
			£30	12th
Major ...	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' total service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

Extras.—In addition to the above rates various allowances are admissible for a number of special appointments which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, is limited to one year.

Officers on appointment will receive an allowance of £50 towards the cost of outfit.

With the exception of administrative officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice so long as it does not interfere with their proper duties.

The rates of pension are as follows.

	Standard Rates per annum
	£
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

The standard rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all. A reduction of 7½ per cent. has been made as and from July 1st, 1934, on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

An officer on appointment is provided with a free passage to India. The families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions, under which they are granted a certain number of return passages home at Government expense during their service.

Officers are required to undergo courses of instruction at the Royal Army Medical College, and at Aldershot prior to their embarkation for India on first appointment.

Further particulars may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1.

LOCAL GOVERNMENT HOSPITAL SERVICES

As a result of the Local Government Act, 1929, many of the former Poor Law hospitals, which were available only for the destitute poor, have become municipal hospitals, available for the benefit of the public generally. The number of hospitals provided by local authorities in England and Wales was stated recently by Sir George Newman to be 858, with 143,494 beds. Of this number 326, with 57,129 beds, are administered under the aegis of public health, and 532, with 86,365 beds, under that of public assistance. The total compares with 988 voluntary hospitals, having 71,956 beds.

The Growth of the Municipal Hospital

The appropriation to general and special hospital use of so much institutional provision, inherited from the now defunct boards of guardians, means not only the separation from the Poor Law of the services performed in such institutions, but the better co-ordination of the public health services of the local authorities in general. It is not too much to say that the Local Government Act of five years ago has created the beginnings of a national hospital system with which it is important that the voluntary hospital system, without losing its character and tradition, should be integrated.

With these large municipal developments there has come about a vast expansion of opportunities for medical service under the local authorities. The institutions which, so long as they remained Poor Law infirmaries, were disliked if not dreaded by the poor, and largely disregarded by the medical profession, have now, as municipal hospitals, come to fill a very large and important place in the hospital picture.

The London County Council Services

The London County Council is the largest of the local authorities in respect of the hospital accommodation it controls and the medical staff which it employs. It has set an example by the advantage which it has taken of the Local Government Act. Under that Act it took over a total of seventy-six hospitals and institutions. These included twenty-eight general hospitals, the largest of which is Lambeth, with accommodation for 1,480 patients; seven of the others have accommodation for over 700. The total cost of maintenance of the various hospital services is some four and a half millions a year, of which nearly three millions is spent on the general hospitals. The total bed accommodation in the hospitals and allocated institutions on transfer was 41,164, but this included nearly ten thousand beds in institutions, the majority of which could not be regarded as suitable for the proper treatment of sick persons. A great deal of structural work and readaptation was put in hand, with the result that a net increase of more than 1,400 beds has been provided.

There are admitted to these hospitals a large number of acute cases, both medical and surgical, but there is, of course, this difference between them and the voluntary hospitals, that the latter can select their patients and reject whom they please, whereas the rate-supported institutions must be prepared to admit any sick poor person who applies, provided that, in the opinion of the medical superintendent, such a patient is suitable for admission. Some 25,000 operations were performed in these hospitals during the last year for which full records were available, and the number of out-patient attendances was a quarter of a million. The chronic sick poor are gradually being concentrated in twelve other institutions which, unlike the rest, are for the present, for administrative reasons, not under the Public Health Acts.

So far as maternity and child welfare services are concerned, the City Corporation and the Metropolitan Borough Councils are the responsible authorities, but the London County Council has maternity beds in its general hospitals, and in several hospitals a fully equipped maternity and gynaecological block. To the maternity wards of the Council's hospitals last year over 10,000 cases were admitted. The accessory medical services under the Council are also important; these include pathological laboratories, *x*-ray units, and a large ambulance organization. In addition to smaller units, the Council has five pathological laboratories, each of which serves a group of institutions attached to the municipal service. These five are at Lambeth, Highgate, Lewisham, Mile End, and Kensington. Recently arrangements have been made whereby post-graduate students of the London School of Hygiene and Tropical Medicine may obtain experience of the technical and administrative methods adopted in these laboratories—experience of a kind very difficult to obtain in the ordinary way.

English and Scottish Cities

The same general provisions hold good, in smaller degree, of other progressive cities. *The Hospitals Year Book, 1934*, gives particulars of twenty-two large general hospitals in provincial cities, administered by local authorities under the Public Health Acts or the Local Government Acts. The average bed accommodation in these twenty-two hospitals is close upon 500, and the whole-time medical staff numbers 100, and the part-time staff 129. Two hospitals in Birmingham—Dudley Road, and Selly Oak—have between them bed accommodation for 1,446, and a staff, whole- and part-time, of thirty-seven. Newcastle-upon-Tyne, in its municipal hospital with 680 beds, has a staff of eighteen. Southampton, with 450 beds, a staff of eleven. Particulars are also given of twenty-four provincial hospitals which remain under the Poor Law. The whole-time staff attached to these hospitals numbers 105 and the part-time staff 127. In Scotland figures are given for three hospitals in Edinburgh, administered under the Public Health Acts, having accommodation for 940 patients, a whole-time medical staff of eight, and a part-time staff of twenty-three; and in Glasgow of five Poor Law hospitals, accommodating 3,300 (with over 3,000 of the beds, on the average, occupied daily), and with a staff of four medical superintendents, thirty-three whole-time assistant medical officers, two part-time assistant medical officers, and twenty-two part-time specialists.

In addition to the large general hospitals maternity and children's hospitals are provided by the larger authorities. In Birmingham, for instance, there are twenty-eight maternity and child welfare centres under the control of the Public Health Committee, as well as four sanatoria, two infectious diseases hospitals, two maternity homes, two infants' hospitals, and four convalescent homes.

Facilities for Instruction

A great amount and variety of clinical material is contained in these hospitals, and many of them are used for undergraduate and post-graduate teaching. In London some useful discussion has taken place between the London County Council and the representatives of the voluntary hospitals. At several of the general hospitals under the old board of guardians arrangements for instruction were made, but these have been much extended since the hospitals came under Council control. Facilities for clinical demonstrations are now available at a number of the Council's hospitals, and for this purpose each teaching hospital in London is associated with one or more municipal institutions. Teaching in obstetrics is afforded in two at least of the Council's hospitals. Facilities are also afforded at the Council's pathological laboratories to post-graduate students in order that they may obtain experience in technical and administrative methods. As an example of the amount of material which may be afforded by a Council hospital, St. James's, Wandsworth, may be cited, where 2,500 operations were carried out in 1933; and where there is a clinic of fifty beds always occupied with serious fracture cases. Nearly 500 acute abdominal cases were treated last year at that hospital.

The post-graduate school at Hammersmith Hospital, the result of a partnership between the Government, the University of London, and the London County Council, will be opened during this autumn. So much has been written about this great development that it is hardly necessary to recapitulate here all that it intends. The

new institution has been "recognized" as a school of London University. There will be four professorships, three in the main clinical subjects—medicine, surgery, and midwifery and gynaecology—and the fourth in pathology. The school buildings will consist mainly of laboratories, lecture theatres, and other accommodation (non-residential), while the associated developments and adaptations of the Hammersmith Hospital adjoining will include two new blocks of buildings for the casualty, receiving, and out-patient departments, a new ward, a massage and light treatment section, and other facilities. One recent decision of the County Council is to provide at Hammersmith a radiological department which shall be a consultative centre for the whole of the hospital service, where cases can be sent from other hospitals for expert opinion on diagnosis and treatment.

It may be added that the clinical material in municipal hospitals is not only vast in amount, but includes a great deal with which it is very important that the young practitioner should be familiar, and which is not much represented in the teaching hospitals. In a recent report to the L.C.C. it is mentioned that the type of case treated in the general hospitals is altering, and there is a continually increasing amount of acute and operative work to be carried out.

Medical Staffing

The policy pursued by the London County Council and other authorities is to provide a whole-time medical service and to have a permanent staff at each general hospital. The grades of officers are: medical superintendents, deputy medical superintendents, senior assistant medical officers, assistant medical officers, and house-physicians and surgeons (resident), and part-time clinical assistants (non-resident). The medical superintendent is required to be a man of high qualifications in at least one branch of medicine, as well as a good administrator and first-class technician. In addition to the medical superintendent, one or more whole-time medical officers, with special qualifications in medicine, surgery, or obstetrics, are appointed. Preference is given to officers holding the higher medical qualifications, M.R.C.P. or M.D. in the case of physicians, F.R.C.S. or M.S. in the case of surgeons. These are graded as senior assistants, and at the larger hospitals one of them ranks as deputy medical superintendent. Deputy medical superintendents are employed as a rule only at hospitals with over 600 beds, of which there are sixteen among the London County Council general hospitals. These officers at institutions with over 750 beds are described as of Grade I, while those at hospitals of from 600 to 750 beds are of Grade II. Senior assistant medical officers are also graded according to the size of the hospital they serve. The appointment to these posts is made to qualified medical practitioners of at least one year's standing in their profession who have held a residential post for at least six months in a general hospital. Those who seek assistant medical officerships at the special hospitals will find general hospital experience desirable, although the lack of it does not debar otherwise suitable candidates. The engagements of assistant medical officers of Grade I are limited to four years, terminable at any time by a month's notice on either side, and the first year of service is on probation. Should the officer's name be on the promotion list at the end of his four years' term, he may remain beyond the period of the original engagement, and at an increased salary. Assistant medical officers of Grade II are on a yearly engagement, but this has been found unsatisfactory to the Council, because of the need for frequent appointments, and because officers leave at a time when, having learnt the ways of the hospitals, they are most useful. It is proposed to renew such appointments for a second year. The junior appointments are those of resident house-physicians and surgeons and part-time clinical assistants. These officers consist of recently qualified men and women who are appointed for limited periods, generally six months, and need not have had previous hospital experience. The six months' period may be extended for further similar periods up to a maximum of two years, provided that not more than twelve months is spent in one hospital.

Scale of Salaries

Medical superintendents in London receive as a maximum between £900 and £1,650 per annum, including an unfurnished house or quarters, valued at £100 a year for superannuation purposes, and the rates on which are paid by the Council. The salary scales are:

General Hospitals	£900 to £1,550
Convalescent Hospitals	£900 to £1,100
Fever Hospitals	£900 to £1,450
Tuberculosis Institutions	£900 to £1,200
Children's Hospitals	£950 to £1,650

Of the general hospitals only two of the smallest in the London County Council area have a commencing salary of £900; at the other end of the scale two have commencing salaries of £1,300. One condition made is that the appointment is to the Council's hospital service, not to an individual hospital, and appointment to the service includes liability, if called upon, to take part in consultations or perform operations at another hospital, although if this happens frequently, on account of the special skill or experience of the officer concerned, a claim for extra remuneration may be considered. Further, in addition to their ordinary remuneration as medical superintendents, the chief medical officers of the infectious hospitals service and of the children's institutions and surgical tuberculosis service receive an allowance at the rate of £200 a year, and the chief medical officer of the medical tuberculosis service, who is also a medical superintendent at a hospital, an additional allowance at the rate of £125.

The scale of salaries for other officers, subject to certain modifications in the different hospitals, is as follows:

Medical Appointments	Remuneration*		
	Minimum	Increase	Maximum
	£	£	£
Deputy medical superintendent (Grade I) ...	650	50	800
" " " (Grade II) ...	600	30	750
Senior assistant medical officers (Grade I) ...	550	25	650
" " " (Grade II) ...	500	25	600
Assistant medical officers...	350	25	425
" " " (yearly engagement)	250	—	—
House-physicians and house-surgeons ...	£120 (resident)		
Clinical assistants (non-resident)	£150 (non-resident) and no emoluments, but meals when on duty		

* Exclusive of the emoluments of board, lodging, and washing, valued at £150 per annum in each case.

In the country generally medical superintendents of Poor Law infirmaries are paid from £600 a year upwards to £1,600, with emoluments; deputy medical superintendents, from £450 to £750, with similar emoluments, and resident assistant medical officers, from £200 to £450, with full board.

Residence, Leave, and Pensions

Generally speaking, all assistant medical officers in London are required to be resident. If in any case the question of an assistant medical officer being non-resident should arise, the primary consideration is the interests of the service. The emoluments of board, lodging, and washing are valued at £150 a year. Non-resident medical officers who are receiving the allowances in lieu of residential emoluments pay for any meals taken at the hospital. Permission to live out is granted only if the accommodation is required or can be utilized for some other purpose.

Liberal annual leave, with pay, and sick leave, with pay, for a reasonable period are allowed by the L.C.C. Leave is also granted for study purposes, not only to officers who are following a university course, but to those who are undertaking other courses of study or research work. The house-physicians and surgeons are not regarded as employed in a whole-time capacity, and reasonable off-duty periods for study are allowed. Clinical assistants attend six sessions of four hours' duration each week. Assistant medical officers also are allowed to improve their qualifications, and leave of absence not exceeding six weeks in any one year may be granted, with rates of pay varying in accordance with the service of the officer. Occasional daily leave for attending a course of instruction for a medical degree or diploma is granted with full pay. These concessions, however, are subject to the condition that

the officer shall continue for a certain period in the service of the Council.

Whole-time permanent appointments are pensionable under the Council's superannuation and provident scheme, which provides for a pension and lump sum payment after the necessary qualifying period of service. Pensions are also payable to officers on the fund who break down in health after not less than ten years' service. Officers resigning have their contributions returned to them, and death benefit is also paid in respect of officers of five years' service or more. A point to bear in mind is that under the London County Council regulations—and the same very widely applies to other authorities—the marriage of a woman officer puts an end to her contract of service with the Council. With certain exceptions, married women are ineligible for employment or re-employment.

Consultant and Specialist Services

Under the new scheme, which came into operation in 1933, the general hospitals have been divided into seven groups on a geographical basis, and the special hospitals and public assistance institutions in the area linked up with them, so that consultants and specialists, who were previously engaged chiefly for individual hospitals, whether at annual salaries or at a fixed charge for visits, are now appointed to the service and utilized as required for the groups of hospitals. The salaries for the part-time consultants and specialists are generally £125 a year for one session a week, £200 for two sessions, £275 for three sessions, £350 for four sessions, £425 for five sessions, and £500 for six sessions, a session to be approximately of 2½ hours' duration. Full-time consulting physicians and surgeons receive £1,250 a year, rising by increments of £50 to £1,500 a year, with no emoluments. The full-time radiologists receive £900 a year, rising by increments of £50 to £1,100. The appointment of part-time consultants and specialists is subject to annual review.

Method of Entrance to the Service

Many provincial areas have now highly developed schemes providing for the employment of many medical men and women of high qualifications at salaries of from £450 to £800 per annum, and, in addition, large numbers of junior officers at salaries of from £200 upwards are employed. These posts offer to all grades remarkable facilities, which should appeal to those who desire to gain experience and at the same time wish to adopt for a period the institutional life. It is a service in which the original appointment and any subsequent promotion depend upon merit, and in which vacancies in the higher grades are filled as far as possible from the existing staff, with no barrier preventing transference from one grade to a higher. Vacancies are usually advertised in the medical journals.

The opportunities of the local government hospital service to those whose career will be spent in general or consultant practice, as well as to those who expect to spend their lives in the public health service, scarcely need to be stressed. One point which the final-year student or the newly qualified practitioner will do well to bear in mind is that some authorities in offering appointments insist upon candidates possessing previous resident hospital experience. Such a requirement may not arise for some years, but the medical man or woman who has gone direct to serve as locumtenent or assistant may find himself or herself cut off from certain avenues of work through having neglected to take resident experience immediately after qualification. We are informed that it almost the rule for the young medical woman to take a residential post, but the young medical man often forgoes this experience. It is certainly deplorable that a competent man should, through ignorance on qualification, deprive himself of the opportunity of following his bent in later years.

It has to be borne in mind, however, that the attractiveness and opportunity of a post under the new public assistance authorities, notwithstanding the effect of the Act of 1929, in assimilating the Poor Law to other public health services, are affected not a little by the policy adopted by the local authority concerned. In the more progressive areas there is a high degree of differentiation in treatment between the sick and mentally afflicted on the one hand, and the purely pauper class on the other—that is to say, between the hospital and the public assistance institution, formerly called the workhouse. The tendency in such areas has been to develop the hospital services on lines approximating to those obtaining in the voluntary hospitals.

In addition to the hospital appointments of the character mentioned, the Local Government Service offers numerous other (part-time) posts, such as those of public assistance medical officer and public vaccinator, which are commonly held by private practitioners. Domiciliary work in the public assistance medical service has been found, as the result of a recent inquiry, to be in many areas very inadequately recompensed, and in localities where unemployment is rife and increasing numbers of people are resorting to public assistance, the work is becoming more onerous. An assurance has been given by the Ministry of Health that where such increase of work is definitely proven, the local authority will be encouraged by the Ministry to listen to the plea for an increase of remuneration.

Enough has been said to show what variety of service, whole-time and part-time, institutional, and domiciliary, the Local Government Service offers, on the one hand, to the ambitious, who desire experience, and, on the other hand, to those who seek a secure position, with superannuation at the end.

PRISON MEDICAL SERVICE

Candidates for the prison medical staff are approved by the Secretary of State for the Home Office on the recommendation of the Prison Commissioners. Application for employment may be made to the Board on a special form, which can be obtained from the Secretary, Prison Commission, Home Office, London, S.W.1.

In the smaller prisons the medical officer is usually a local practitioner, but in the larger the members of the medical staff are required to devote their whole time to the service. In the case of those required to give their whole time to the service the appointment in the first instance is to the post of medical officer Class II, and from the seniors of this rank the medical officers Class I are selected as vacancies occur.

Largely as a result of action taken by the British Medical Association some years ago, the salaries of prison medical officers were improved, and, inclusive of Civil Service bonus, now are: medical officer Class II, £505 7s., rising by annual increments to £726, medical officer Class I, £783 15s., rising by annual increments to £939 14s. Unfurnished quarters are provided, or an allowance in lieu is made.

There are 17 medical officers Class II, 12 medical officers Class I, and 26 part-time medical officers. The service is a small one, and therefore vacancies are comparatively rare and promotion is very slow. The work of a prison medical officer offers exceptional opportunities for research in criminal psychology, forensic psychiatry, and mental deficiency.

MEDICAL PRACTICE IN BRITISH DOMINIONS AND FOREIGN COUNTRIES

Medical Acts have now been passed in almost all places forming part of the British Empire beyond the seas, and registers of duly qualified practitioners are consequently maintained. To these registers medical men educated in the United Kingdom are generally admissible merely on payment of a registration fee, providing they produce evidence that they are of good repute and are either registered or eligible for registration in the United Kingdom, as the local requirement may be. The only exception to this statement that need be made relates to the Dominion of Canada. Each of its provinces acts in medical matters as an independent State. The result has been that reciprocity of practice has in the past been established between this country and each of the provinces

of Canada except British Columbia, where certain obstacles were never overcome. It has, however, to be recorded that reciprocity no longer exists with Saskatchewan, New Brunswick, Ontario, and Quebec. We would advise any medical man proposing to practise in Canada first to communicate with the Provincial Registrar, stating what degrees or diplomas he holds, and asking for information as to the precise steps he must take in order to obtain admission to the Provincial Register. The Licence of the Dominion Council, which can only be obtained after examination, entitles its holder to registration in any of the provinces of Canada, though in regard to Quebec there is a proviso that " he must have been registered in the province five years prior to the application for the recognition of the Dominion Licence." In order to sit for the examination for the Dominion Licence, it is necessary to obtain either a licence from one of the provinces (this can be obtained from one of those with whom reciprocity has been established), or a certificate from a Provincial Council that the requirements of that Council in regard to preliminary education, matriculation, medical curriculum, and graduation have been complied with.

Italy and Japan are the only two foreign States with which complete medical reciprocity has been established, though there are other countries which grant a limited recognition to British qualifications. Generally speaking, in Continental countries (with the exception of the kingdom of Italy) a British medical man desiring to exercise his profession therein must pass practically the same examinations as those imposed on natives of the country. In France naturalization is now required also. The same observation applies to all foreign States in the South American continent. Each of the United States of North America has its own laws and regulations governing medical practice ; and all of them require the holder of a British qualification to submit to an examination. A number of the States, including New York, Illinois, Michigan, and Indiana, require naturalization.

A pamphlet showing the conditions under which medical and dental practitioners legally qualified in their own country may practise abroad can be obtained from the offices of the General Medical Council, 44, Hallam Street, Portland Place, London, W.1, price 2s. 6d., or 2s. 9d. post free in the United Kingdom. Practitioners who think of going abroad to practise will find therein much useful information, including the name of the official in each country to whom requests for further particulars should be addressed. A new edition was published in 1933.

THE COLONIAL MEDICAL SERVICE

The Colonial Medical Service consists of the Medical Services in Bahamas, Barbados, Bermuda, British Guiana, British Honduras, Ceylon, Cyprus, Falkland Islands, Fiji, Gambia, Gibraltar, Gold Coast, Hong-Kong, Jamaica, Kenya, Leeward Islands, Malaya, Mauritius, Nigeria, Northern Rhodesia, Nyasaland, Palestine, St. Helena, Seychelles, Sierra Leone, Somaliland, Tanganyika, Trinidad, Uganda, Western Pacific (Gilbert and Ellice Islands, and British Solomon Islands), Windward Islands, and Zanzibar.

New entrants to the Service will be liable to transfer to any scheduled post therein whether or not such transfer represents promotion, provided that:

(*a*) No officer whose first appointment is to an office in a Dependency in which he was ordinarily resident at the time of appointment shall be liable to be transferred to an office outside that Dependency unless and until he shall have accepted an office in another Dependency.

(*b*) No officer shall be transferred without his own consent to an office which in the opinion of the Secretary of State is of less value (due regard being had to climate and other circumstances) than that which he already holds.

Officers who do not hold scheduled posts are eligible to apply for transfer to such posts. Appointment, confirmation, promotion, retirement, and transfer of M.O.'s will be governed by the directions of the Secretary of State.

No officer of the Service is entitled, as of right, to private practice, the Service being envisaged as essentially a Service of whole-time officials whose primary duty is to the State.

The possession of a qualification registrable by the General Medical Council is a condition of eligibility for admission to the Colonial Medical Service.

Medical appointments in the self-governing Dominions and the territories under their control, and in Southern Rhodesia and Malta, are made by the Governments concerned, and are not in general open to candidates in the United Kingdom. In the Bahamas, Barbados, Bermuda, Ceylon, Jamaica, and Mauritius vacancies are practically always filled by the appointment of qualified local candidates or; in the case of some of the higher posts, by transfer from other colonies. Appointments to the medical services of the remaining colonies and other territories under the administrative direction of the Colonial Office are made by the Secretary of State for the Colonies in this country.

Conditions of service and superannuation are in the main determined by the economic resources and general public health policy of the individual colony and its local government, and vary almost as widely as do conditions of climate. Moreover, the extent of the control exercised by the Colonial Office varies according to the constitutional status of the particular colony, and the detailed information available centrally is not always complete. The intending candidate, therefore, should make comprehensive inquiries as to local conditions, and particularly as to facilities for private practice where this is precluded by the terms of appointment. He will also do well to supplement official information by reference to the Medical Secretary at the Central Office of the British Medical Association (Tavistock Square, London, W.C.1), where reports obtained from time to time from the local Branches are available.

To those physically and mentally suited to the climatic and social conditions peculiar to the various colonies the Colonial Medical Service should, and in most cases does, offer a field of professional activity rich in interest and in opportunity for pioneer work, with increasing facilities for specialization and research.

In view of the financial stringency from which Colonial Administrations are suffering, in common with Government and other authorities, it has been necessary, in some instances, to modify the terms and conditions of service, and whilst the unreduced emoluments, allowances, etc., are stated in this article, the fact that temporary reductions are in operation in many branches of the Service must be borne in mind, and intending applicants should satisfy themselves on this point before signing any agreement of service. In most colonies establishments have been reduced, and this entails a considerable reduction in the number of possible vacancies and affects materially the prospect of promotion.

Apart from immediate economic stringency, the outlook for the Colonial Medical Service is in the main a hopeful one, and especially so in the larger and better organized branches. The necessity, however, remains for making careful and sufficient inquiry as to the position in any branch of the Service before accepting appointment.

The medical services recruited in this country by the Secretary of State for the Colonies include those of West Africa, East Africa, Malaya, Hong-Kong, the West Indies, Fiji and the Western Pacific territories, and Palestine, besides a number of smaller services offering individually one or two appointments.

In Fiji, although the basic salary of district medical officers (£500, by £25 to £725) is below the £600 minimum recommended as adequate by the British Medical Association, this fact is offset by the concession of allowances of from £175 to £275 in some of the districts, the value of private practice in the other districts being estimated at from £100 to £600 a year. (Temporary reductions are in operation.)

The services in the West Indies and some of the smaller colonies have not yet conceded the £600 minimum commencing salary, and whilst facilities for remunerative private practice, general conditions of service, and a relatively low cost of living must in some instances be taken into consideration, these compensations are by no means universal. The service in the Leeward Islands is in a condition which requires special notice by way of warning. The position in Grenada has been improved, though such improvements have not extended to St. Lucia and St. Vincent. (Temporary reductions are in operation.)

In general, candidates for the Colonial Medical Service must be between the ages of 23 and 35. Appointments are, subject to a varying period of probation, for the most part classed as permanent and pensionable, but there are some appointments by agreement for a specified limited term of service. There is no entrance examination, but practitioners selected for appointment must obtain a certificate of physical fitness from one of the consulting physicians to the Colonial Office. Post-graduate experience in hospital appointments is desirable, and in a few cases special allowances are conceded to the holders of a D.P.H. Successful candidates are normally required to undergo an approved course of instruction in tropical medicine, the fees for their tuition being defrayed by the Government and an allowance being paid during their instruction.

Some thirty medical women are employed in child welfare, maternity, and laboratory work, mainly in the larger services—for example, those in East and West Africa and Malaya. Salaries are the same as for men.

The bulk of the appointments made by the Secretary of State in this country are to East and West Africa and Malaya.

West Africa

This is one of the best organized and best paid branches of the Service, and includes Nigeria, the Gold Coast, Sierra Leone, and the Gambia. Climatic conditions vary considerably over this area, but they are in general admittedly trying. This fact is at present recognized by the provision of more frequent leave periods than are usual elsewhere.

The service includes medical, public health, and laboratory divisions, and specialist posts are almost invariably filled by promotion from the staff. The rate of pay for a medical officer is £660 on appointment, rising by annual increments to £960, together with a seniority allowance of £72 a year after reaching £720, but temporary reductions are in operation. There are a considerable number of specialist and administrative posts carrying relatively high salaries, varying from £1,300, with duty allowance of £260, to £1,800, with duty allowance of £360. All appointments in the staff are pensionable. Officers may retire voluntarily on reaching 50 years of age, and may be called upon to retire at 55. Pensions of existing officers are calculated at the rate of 1/480th of the officer's pensionable emoluments (salary and house allowance) in respect of each complete month of service, but for new entrants the basis of calculation is 1/600th. The pension may be converted into a reduced pension of three-quarters of the full pension, with a gratuity of ten times the amount of the reduction. Gratuities of £1,000 or £1,250 may be drawn on retirement after nine or twelve years' service. Members of the Service in West Africa are not usually permitted to take their wives or young children with them until they have acquired experience of the conditions of life and have obtained the sanction of the Governor. In the case of young children this is only exceptionally given.

African Medical Officers

A number of Government appointments for African medical officers exist in the West African Colonies. These appointments carry salary on the scale £500-£25-£600, and there are higher scales of £600-£30-£720, and £740-£820.

East Africa

This branch of the Service includes Kenya, Uganda, Tanganyika Territory, Nyasaland, Zanzibar, and British Somaliland. In East Africa there is a very wide scope for clinical work, both medical and surgical, as well as for research and for preventive medicine and sanitation. In most stations conditions allow a medical officer's wife to accompany him, but this is not generally desirable on first appointment. In some Dependencies the consent of the Governor must be obtained. The service includes a medical and a sanitary division. The former is open to those holding ordinary medical and surgical qualifications, post-graduate experience in a hospital appointment being an advantage; posts in the sanitary division will as far as possible be filled by those holding a Diploma in Public Health or a Diploma in Tropical Medicine and Hygiene. Climatic conditions vary considerably. In a considerable part of Kenya they approximate more to the temperate than to the tropical zone; but there are some areas in the East African Dependencies where conditions more closely resemble those in West Africa. The rate of pay for a medical officer is from £600 on appointment, rising by annual increments of £30 to £840, and thereafter, subject to an efficiency bar at this point, by £40 to £920. Holders of the D.P.H. receive a special concession of two increments on appointment, or from the date of obtaining the diploma. (Temporary reductions are in operation, and in Kenya and Tanganyika the payment of fees to medical officers for conducting post-mortem examinations has been suspended.)

The gratuities available on retirement after nine or twelve years' service are similar to those in West Africa. Officers may elect or may be required to retire on pension on reaching the age of 50 years. Pensions of existing officers are calculated at the rate of 1/480th of emoluments (including value of free quarters) for each completed month of service, but for new entrants the basis of calculation is 1/600th. The officer of twenty-five years' service who has reached the maximum of the long scale receives a pension of approximately £650 per annum. Pensions are convertible, under certain conditions, into a reduced pension and a gratuity.

Malaya

This branch of the Service covers the Straits Settlements, the Federated Malay States, the Unfederated Malay States, and the State of Brunei in Borneo. The salary of $500 a month, with an annual increment of $25, rising to $800 at the top of the time-scale ($1 is fixed at 2s. 4d.), is generally considered adequate in view of the present cost of living, which is somewhat higher than that in England. The officer of twenty-five years' service, even if he has not held a senior appointment carrying a salary above the maximum of the time-scale, receives a pension of approximately £560 per annum. Pensions are convertible under certain conditions into a reduced pension and gratuity.

The climate of Malaya is, for the Tropics, a healthy one. It varies little throughout the year. The average rainfall is about 100 inches a year, and vegetation is always green. People who lead regular active lives have no difficulty in keeping in good health. European children do well in Malaya up to the age of about 6.

The professional duties of a medical officer may include medical, surgical, medico-legal, and public health work. His administrative work comprises hospital administration, diets, returns, and financial work, and includes the inspection of smaller hospitals and dispensaries. Districts vary in size, and a certain amount of travelling is necessary. The white population in each district varies. The district hospitals hold from 50 to 300 beds. There is a staff of locally recruited men, mostly trained at the Singapore College of Medicine. Asiatic dressers and trained hospital assistants are employed in hospitals and dispensaries. In addition to European sisters, there is a local nursing staff. All hospital equipment is supplied by Government, includ-

ing instruments. At both the Institute for Medical Research in Kuala Lumpur, Federated Malay States, and the King Edward VII College of Medicine, Singapore, there are opportunities for research as well as for routine investigations. In addition to the full-time professional posts at the College of Medicine several of the medical staff in Singapore hold part-time lectureships.

Sudan Medical Service

This Service is a department of the Sudan Government, and includes a number of Syrian and Sudanese medical officers and Sudanese assistant medical officers. The British medical inspectors are from the outset senior to all medical officers. The Service offers ample opportunities for specialization and for research, as well as for general, medical, and surgical work.

The climate varies, but is not in general unfavourable, though hot. In the northern desert the nights are cool, even in summer, and the winter is pleasant and often cold. In the central zone there is a rainy season of about four months, during which large areas become malarious. The south is more tropical in character, and mosquito-protected houses, nets, and protective quinine are essential during the greater part of the year, though even here the winter months are cool and pleasant. It is not considered desirable for medical inspectors to be accompanied by their wives until they have gained some knowledge of the language and the general conditions of life.

The commencing pay of a medical inspector is £E.720. On confirmation of appointment and success in the requisite examinations in Arabic the salary is increased by periodic increments to £E.1,200. Four senior administrative posts carry higher salaries. There is a compulsory contribution of 5 per cent. of pay towards pension, which, for a medical inspector, amounts, after twenty years' service, to £E.500 a year. All salaries are subject to an abatement of 7½ per cent. owing to world depression. An officer who is compulsorily retired before completing fifteen years' service is not entitled to pension, but receives a gratuity.

Official Sources of Information

All inquiries in connexion with medical appointments in the self-governing Dominions and their Dependencies should be addressed to the High Commissioners or Agents-General for the Dominions. Intending applicants are also recommended to consult the Dominions Office and Colonial Office List, which may be seen at the Colonial Office Library or at the Library of the British Medical Association if not otherwise available, and the Professional Handbook, Part III (price 4d.), issued by the Oversea Settlement Department, Dominions Office, Caxton House, Tothill Street, London, S.W.1.

The position in Egypt is uncertain; questions as to the possibility of any medical appointments becoming available under the Egyptian Government should be addressed to the Director-General, Public Health Department, Cairo.

Inquiries as to vacancies and conditions in the Sudan Medical Service should be addressed in the first instance to Dr. Hodson, 24, Welbeck Street, London, W.1.

All inquiries in connexion with Colonial medical appointments made by the Secretary of State for the Colonies, or such vacancies as may occur in Palestine, should be addressed to the Director of Recruitment (Colonial Service), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

There remain a number of medical appointments made by mining companies and other commercial undertakings in various parts of the Tropics. Much caution should be exercised in accepting such posts, and the form of contract should be subjected to very careful scrutiny. Advice in this connexion should always be sought from the Medical Secretary of the British Medical Association, British Medical Association House, Tavistock Square, London, W.C.1.

SPECIAL DIPLOMAS

Information about the regulations for the various Diplomas in Tropical Medicine, in Psychological Medicine, and in Public Health is given in the appropriate sections of this Educational Number at pages 432–6 and 438. Further details in regard to the D.P.H. and the D.T.M. will be found in the late Sir Andrew Balfour's *Guide to the Regulations, Courses, and Examinations for Qualification in Public Health and Tropical Medicine*, published by the British Medical Association, Tavistock Square, W.C.1, at the price of 3s.

It should perhaps be noted here that of the various diplomas in special subjects granted by licensing bodies only those in Public Health and Sanitary Science and State Medicine are at present admissible for entry in the official *Medical Register*, though other special diplomas may, of course, be included among the particulars of qualifications set out in the *Medical Directory*.

As stated at page 401 a Diploma in Tuberculous Diseases is granted by the University of Wales to qualified medical practitioners; new regulations for this diploma are now in force.

Diplomas in Medical Radiology

Diplomas in Medical Radiology are granted by the Universities of Cambridge, Edinburgh, Liverpool, and London.

The Cambridge Diploma.—A Diploma in Medical Radiology and Electrology is granted by the University of Cambridge. The primary object is to provide adequate training in a branch of medical work which is becoming increasingly important and difficult, and which is outside the ordinary medical curriculum. Before admission to any course for the diploma a candidate shall produce evidence that he holds a medical qualification approved by the committee and also satisfy the committee that he has had sufficient post-graduate clinical experience. The next course, which begins on October 3rd, 1934, occupies nine months. The first four months, which can be spent either in Cambridge or in London, are occupied with (*a*) lectures and practical work in physics, in preparation for the examination for Part I in February, (*b*) an introductory course of clinical instruction in radiology and electrology, (*c*) a course of instruction in pathology in relation to radiology and electrology. The next three months must be spent in London, and are occupied with (*a*) lectures and demonstrations in radiology and electrology (including radium therapy) organized by the British Institute of Radiology, (*b*) clinical instruction in the radiological department of a hospital approved by the committee. During the final two months of the course a candidate must hold a clinical clerkship or similar appointment in the radiological department of a hospital approved by the committee. This part of the course may be done in London or elsewhere. The examination for Part II will be held in July.

Further particulars as to courses and examinations may be obtained from G. Stead, M.A., Secretary for the Diploma, Cavendish Laboratory, Cambridge, or the General Secretary, British Institute of Radiology, 32, Welbeck Street, W.1. Completed application forms must be sent to the Secretary for the Diploma at Cambridge.

The Edinburgh Diploma.—Candidates for the diploma must be graduates in medicine and surgery of the University of Edinburgh, or hold corresponding degrees or qualifications registrable with the General Medical Council of Great Britain, or of such other Universities or Medical Schools as may be recognized for the purpose by the University Court. Candidates are not admitted to the examination for the diploma until after the lapse of not less than one year from obtaining a registrable qualification. The course of study begins in October and extends over a period of not less than three terms. The examination, which is written, oral, and practical, is in two parts: (*a*) physics, and (*b*) radiology. The examination is

held twice yearly. Full particulars may be obtained from the Dean of the Faculty of Medicine. In this connexion it may be noted that radiology can now be taken as the special subject in the examination for Membership of the Royal College of Physicians of Edinburgh. Several candidates have already taken radiology as their special subject; it means that an honours standard has to be attained.

The Liverpool Diploma.—The University of Liverpool grants a Diploma in Medical Radiology and Electrology. Candidates before admission to the examination for the diploma must possess a registrable qualification approved by the university in medicine and surgery, and must have attended courses of instruction in (*a*) physics (two terms); (*b*) (i) radiology and (ii) electrology, during the nine months in the *x*-ray and electrotherapeutic departments of a hospital or hospitals. An examination is held in March and June in physics, in June radiology and electrology. Examination in either part may be taken separately. Fees: tuition, £31 10s.; examination and diploma, £6 5s. A registration deposit fee of £5 5s. is charged on application and credited to the fees, but is not returnable in the event of the candidate failing to register. These courses commence during the first week in October. Application should be made to the Dean, Faculty of Medicine, the University of Liverpool.

Conjoint Diploma in Medical Radiology.—Regulations have now been issued for the Diploma in Medical Radiology (D.M.R. R.C.P. and S.Eng.) which has recently been instituted by the Royal College of Physicians of London and the Royal College of Surgeons of England. The examination is divided into two parts, the first comprising physics as applied to radiology, the second medical radiology, with special reference to its clinical application, including radio-diagnosis, *x*-ray therapy, and radium therapy. Both parts will be held in January and July of each year. Candidates may enter for them either together or separately, subject to the production of the required certificates. The course for the diploma extends over one academic year (nine months) of full-time study subsequent to the attainment of a recognized medical qualification. At the discretion of the committee of management the conditions of admission may be modified in special cases, but exemption will not be granted from any part of the examination. A syllabus has been drawn up for Part I of the examination, but not for Part II. The fee for admission or readmission to each part is six guineas. Copies of the regulations may be obtained from the secretary, at the Examination Hall, 8–11, Queen Square, W.C.1.

The London Diploma.—The University grants an Academic Diploma in Medical Radiology. The course is open to registered medical practitioners and graduates in medicine of this or another approved university. Students are required to attend a course of study approved by the University, and extending over not less than one academic year, at one or more of the Colleges or Schools of the University. The subjects of the course are as follows: Part I: physics and electro-technology. Part II: (*a*) radiography and radio-diagnosis; (*b*) radiotherapy. The examination for the Academic Diploma in Medical Radiology consists of two parts. Candidates may enter for Part I and Part II at the same examination, or may enter for Part I only. The examination will consist of a paper, a practical examination, and an oral examination in each of the subjects under Part I and Part II. Full particulars may be obtained from the Academic Registrar, University of London, South Kensington, S.W.7.

Diploma in Laryngology and Otology

The Conjoint Examining Board in England (Examination Hall, Queen Square, London, W.C.1) grants a Diploma in Laryngology and Otology (D.L.O.) after an examination held in June and December. The examination comprises two parts: Part I, on the anatomy, embryology, and physiology of the ear, nose, pharynx, larynx, trachea and bronchi, and oesophagus; Part II, on the recognition and use of special instruments and appliances, and the medicine, surgery, and pathology of these regions. Candidates may enter for Part I at any time after a recognized qualification in medicine, surgery, and midwifery has been obtained. Candidates may enter for Part II on completion of one year of special study of diseases of the ear, nose, pharynx, and larynx, after a recognized qualification has been obtained, provided that Part I has been previously passed, and on production of certain certificates. The conditions of study may be modified at the discretion of the Committee of Management in special cases. The fee for admission or readmission to each part is six guineas.

Diplomas in Ophthalmic Medicine

A special Diploma in Ophthalmic Medicine and Surgery is granted by the University of Oxford and by the Conjoint Examining Board in England.

University of Oxford.—For the Diploma in Ophthalmology (D.O.) attendance on a twelve months' course of clinical ophthalmology in hospitals or institutions recognized for the purpose by the Board of the Faculty of Medicine, and on a course of instruction in Oxford lasting two months; is obligatory. Candidates must have their names on the *Medical Register* of the United Kingdom, unless, being Bachelors or Doctors of Medicine of universities outside the United Kingdom, they have obtained special permission from the Board of the Faculty of Medicine.

The Conjoint Board.—The Diploma in Ophthalmic Medicine and Surgery of the Conjoint Examining Board of the Royal College of Physicians of London and Royal College of Surgeons of England is issued after completion of an examination held in two parts—in January and July. The examination in each case is partly written, partly oral, partly clinical or practical. Part I comprises anatomy and embryology of the visual apparatus, physiology of vision, elementary optics; Part II comprises optical defects of the eye, ophthalmic medicine and surgery, pathology with special reference to medical and surgical ophthalmology. Candidates may enter for Part I at any time after a recognized qualification in medicine, surgery, and midwifery has been obtained. Candidates may enter for Part II on completion of one year of special study of ophthalmology after a recognized qualification has been obtained, provided that Part I has been previously passed, and on production of certain certificates. The conditions of study may be modified at the discretion of the Committee of Management in special cases. The fee for admission or readmission to each part is six guineas.

Diplomas in Obstetrics

The Society of Apothecaries of London, as stated on page 402, confers a Mastery of Midwifery, and issues a diploma under this title denoting the possession of specialized knowledge of ante-natal care, midwifery, and child welfare. This is a post-graduate diploma, and is not registrable under the Medical Acts. The same applies also to the new diploma D.C.O.G., which the British College of Obstetricians and Gynaecologists now issues to registered medical practitioners who have had special post-graduate training and experience in the subject and have satisfied the examiners. (See p. 403.)

The Conjoint Examining Board in England, according to the new regulations for its Diploma in Gynaecology and Obstetrics (D.G.O. R.C.P. and S.Eng.), will hold examinations in April and October. Those eligible for admission to examination must have held a degree in medicine and surgery recognized by the Board, or a qualification registrable in this country, for not less than three years. The subjects of the examination are gynaecology and obstetrics (including pathology, histology, and bacteriology in relation to these subjects), and ante-natal, post-natal, and infant welfare work. The examination is written, oral, and clinical, but only those candidates are admitted to the clinical who satisfy the examiners in the written and oral. A form is issued on which particulars

have to be given and certified as to resident appointments in the gynaecological and obstetrical department of a recognized general hospital, in a gynaecological hospital, or a maternity hospital, or as to registrarship or clinical assistantship held in such institutions, together with particulars as to regular attendance, with responsible care of patients, at recognized ante-natal, post-natal, and infant welfare clinics during twelve months. It is added that these conditions of study may be modified in the case of a candidate who has carried out original investigations or written a thesis on some subject in gynaecology or obstetrics, or whose studies have extended over a prolonged time without fulfilling the exact conditions set out; but exemption will not be granted from any part of the examination. The fee for admission to examination or re-examination is ten guineas. Copies of the regulations for this diploma may be obtained from the Secretary, Examination Hall, Queen Square, W.C.1.

University of Lausanne

M.D. Examination for Medical Practitioners.

It has been possible for a long time to obtain the M.D. degree (not registrable in this country) from one of the State Universities in Switzerland—namely, Berne, Geneva, and Lausanne. The regulations of the Faculty of Medicine of the University of Lausanne have recently been drastically revised by the authorities, and in October, 1930, new regulations came into force, the main effect of which is to provide a special M.D. examination for medical practitioners from other countries. Particulars may be obtained from Dr. C. A. H. Franklyn, honorary secretary, Lausanne Medical Graduates, The Corner House, 34, Queensway, Wragby Road, Lincoln (booklet and copy of regulations, post free, 2s. 1½d.).

MEDICAL MISSIONARIES

Missionary societies are in constant need of qualified men and women to fill vacancies as they occur in their hospitals, and also to enable them to take advantage of fresh openings. To those suitably endowed the mission field offers unique opportunities for interesting work, and the development of native medical schools, as training institutions in connexion with some of the larger mission hospitals, affords excellent scope for valuable work to medical men and women who are qualified to teach. It is not usually expected that medical missionaries should take a position such as would otherwise be occupied by an ordained clergyman or minister, but it is essential that they should be prepared to exert their influence in any hospital to which they may be sent, so that a Christian atmosphere may be maintained and the work of evangelization be carried on through the ministry of healing.

As for scientific and other qualifications for the work, medical missionaries, in addition to being physically capable of sustaining a life which makes a great demand upon their strength, should be thoroughly well-trained physicians and surgeons. It is very desirable that they should have held a resident appointment at a general hospital, and have a good knowledge of practical surgery, gynaecology, tropical medicine, and the treatment of eye diseases. Useful information can be obtained from the secretaries of the various Missionary Societies, or from Thomas B. Adam, Honorary Secretary, Medical Advisory Board on Medical Missions to the Conference of Missionary Societies in Great Britain and Ireland, The Crossways, 45, Kenton Road, Harrow, Middlesex, or 19, Furnival Street, E.C.4.

Dental Surgery

Until the passing of the Dentists Act, 1921, the profession of dentistry in this country was regulated by enactments corresponding very closely with those relating to the practice of medicine—that is to say, there was no direct prohibition of the act of practice; and the Dentists Act of 1878 gave the same degree of protection to legally qualified and registered dentists as was accorded to registered medical practitioners—namely, the reservation of the use of certain titles. This Act provided also (1) that no person should take or use the name or title of "dentist" (either alone or in combination with any other word or words) or of "dental practitioner," or any other name, title, or description expressed in words or by letters implying that he was specially qualified to practise dentistry, unless he was registered, under a penalty of £20; and (2) that an unregistered person could not recover any fee or charge in respect of any dental operation, attendance, or advice. But, in the case of the practice of medicine by unqualified and unregistered persons, certain deterrent factors came into play—such as the inability to give a death certificate—which did not operate to the same extent in the case of dentistry; hence, unqualified practice was far more prevalent in dentistry than in medicine, and increased after a decision of the House of Lords placing a narrow interpretation upon the words "specially qualified to practise dentistry," by defining the word "qualified" as not referring to competence but to the possession of a recognized diploma.

Dentists Act, 1921

This unsatisfactory position was remedied by the passing into law of the Dentists Act, 1921; its provisions are based largely on the recommendations of a departmental committee appointed in 1917 by the Privy Council "to investigate the extent and gravity of the evils connected with the practice of dentistry and dental surgery by persons not qualified under the Dentists Act." Since November 30th, 1922, no person has been permitted by law to practise or hold himself out, whether directly or by implication, as practising or as being prepared to practise dentistry unless he is on the *Dentists Register* kept under the Dentists Act, 1878. The practice of dentistry is defined as including "the performance of any such operation and the giving of any such treatment, advice, or attendance, as is usually performed or given by dentists," and the performing of any operation or the giving of any "treatment, advice, or attendance on or to any person as preparatory to or for the purpose of or in connexion with the fitting, insertion, or fixing of artificial teeth." The maximum penalty incurred by an unregistered practitioner is £100 for each offence. There are, however, certain important exceptions to the requirement of registration. A registered medical practitioner may practise dentistry without being on the *Dentists Register*, though he may not give dental treatment to insured persons under the National Health Insurance Acts unless he be so registered. A registered pharmaceutical chemist or chemist and druggist may extract a tooth where the case is urgent and where no doctor or dentist is available, but the operation must be performed without any kind of anaesthetic; and minor dental work may be performed in a public dental service under the personal supervision of a registered dentist provided it is in accordance with conditions approved by the Minister of Health after consultation with the Dental Board.

Dentistry may be carried on by a corporate body provided that the majority of the directors and all the operating staff are registered dentists, and that no business other than dentistry or only some business ancillary to dentistry is carried on by the company. Companies carrying on the business of dentistry at the present time are permitted to continue to do so with certain restrictions, provided that the name of the company as well as the names of the directors have been entered in a list kept under the Act for that purpose. Every director or manager of a company convicted of an offence under the Act will be held to be guilty of the offence unless he proves that the offence was committed without his knowledge, and the court may, in addition to a fine, order that the name of any director convicted shall be removed from the list of directors aforesaid.

The Dental Board

On the establishment of the Dental Board in 1921, certain powers and duties of the General Medical Council were transferred to it, including the duty of erasing from the *Dentists Register* any entry which has been incorrectly or fraudulently made. An inquiry into the case of a person alleged to be liable to have his name erased from the *Register* is made by the Board, which reports its findings

to the General Medical Council, the order directing the erasure being made by the Council. A name erased from the *Register* can only be restored by the Council upon a report made by the Board. An appeal to the High Court may be made by any person aggrieved either by refusal of the Board to register his name or by the removal of his name from the *Register*. The administrative expenses of the Board are defrayed from the registration fees and annual retention fees, but any surplus may be allocated to purposes connected with dental education and research or to any public purposes connected with the profession of dentistry. The offices of the Dental Board are at 44, Hallam Street, London, W.1.

Dental Education and Examination

The preliminary examination in arts is the same for medical and dental students, and the early stages of their education embrace much the same subjects[1]; and, as the dental student is required to obtain a knowledge of the broad principles of medicine and surgery, it is necessary for him to pursue some portion of his studies at a medical school as well as at a special dental school, the latter not undertaking the teaching of these subjects. Registration as a dental student is not in all cases compulsory, though it is to be advised as convenient as affording proof of the date at which professional education began, and it is required by most of the licensing bodies, all of whom insist upon a curriculum covering four academic years.

Degrees and diplomas in dentistry are granted by the Universities of Belfast, Birmingham, Bristol, Dublin, Durham, Leeds, Liverpool, London, Manchester, St. Andrews, Sheffield, and the National University of Ireland, as will be found stated in the articles on these universities. Licences in dentistry entitling the holder to be registered on the *Dentists Register* are granted by the Royal Colleges of Surgeons of England, of Edinburgh, and in Ireland, and by the Royal Faculty of Physicians and Surgeons of Glasgow.

Recognized dental schools are numerous. In London there are those connected with the Royal Dental Hospital, Leicester Square; the National Dental Hospital (now the University College Hospital Dental School), Great Portland Street; Guy's Hospital; King's College Hospital; and the London Hospital. In the provinces there are the Birmingham Dental Hospital; the Royal Infirmary and the General Hospital, Bristol; the Dental Hospital and the Public Dispensary, Leeds; the Dental Hospital, Liverpool; the Dental Hospital, Manchester; the Sutherland School, Newcastle-on-Tyne; the Royal Hospital, Sheffield. In Scotland there are the Dental Hospital, Dundee; the Incorporated Dental Hospital and School, Edinburgh; and the Incorporated Dental Hospital, Glasgow; and in Ireland, the Belfast Dental School, the Incorporated Dental Hospital of Ireland, Dublin, and the Royal College of Surgeons in Ireland, Dublin.

All who think of becoming dentists may be advised to study a memorandum, drawn up for their guidance on behalf of the Board, setting out in convenient form and in untechnical language information for which the Board is often asked.[2] It will be seen from this pamphlet that in order to assist suitable students the Board has instituted a system of bursaries to pay the fees of those who have not the financial means to qualify, and in exceptional cases maintenance may also be given as well.

General Medical Council's Recommendations

The Dentists Act still leaves to the General Medical Council the duty of controlling the course of study and examinations required for dental qualifications.

Recommendations as to the course of study and examinations to be required of candidates for degrees or licences in dentistry or dental surgery were adopted by the Council this year, and come into force on October 2nd, 1933. We print them below in a somewhat abridged form.

[1] See the Memorandum on Students' Registration printed in the article on the General Medical Council at page 393.

[2] *Memorandum on the Procedure to be Adopted by Those who Desire to Enter the Profession of Dentistry, with Notes on Costs and Prospects.* 1933. Dental Board of the United Kingdom, 44, Hallam Street, W.1. Price 1s. post free.

Preliminary Examination and Registration

Every dental student should, at the beginning of his studentship, be registered in the manner and under the conditions prescribed for medical students. Before registration in the *Dental Students' Register* every applicant should be required to have passed, in addition to the examination in general education, which shall be the same as that required for medical students, an examination in elementary physics and chemistry, conducted or recognized by one of the licensing bodies, which shall also be the same as that required for medical students. Before registration as a dental student every applicant should produce evidence that he has attained the age of 17 years.

Professional Study

Every candidate for a degree or licence in dentistry or dental surgery should be required before admission to the final or qualifying examination to produce certificates showing:

(i) That he is at least 21 years of age.

(ii) That he has been registered as a dental student.

(iii) That he has, subsequently to registration as a dental student, been engaged in professional study for at least four years, of which three years at least shall have been spent at a school or schools recognized for professional study by one of the licensing bodies.

(iv) That, subsequently to registration as a dental student, he has attended at a recognized medical or dental school courses of instruction which should be the same as those for medical students, in (*a*) chemistry, and (*b*) physics, in their application to medicine and dentistry, (*c*) Elementary biology. (A student who has diligently attended an approved course of elementary biology in a teaching institution recognized by a licensing body may be admitted to a professional examination in elementary biology immediately after his registration as a dental student.) That he has attended at a recognized medical school courses of instruction, *specially adapted for students in dentistry*, in the following subjects: (*d*) human anatomy, including dissections for three academic terms of nine months. This should include not less than 40 lectures and/or demonstrations. The course of dissections shall include dissections of the head and neck. (*e*) Physiology (with laboratory instruction) extending over two academic terms of six months. This should include not less than 40 lectures and/or demonstrations; also a practical course in chemical and experimental physiology of not less than 40 hours. (*f*) Histology should consist of a practical course of not less than 30 hours. (*g*) General pathology for two academic terms (not less than 40 lectures and/or demonstrations). (*h*) Bacteriology for one term (not less than 10 lectures and 24 hours' practical work). (*i*) Medicine for two academic terms or six months (not less than 30 meetings of the class). (*j*) Surgery for two academic terms or six months (not less than 40 meetings). (*k*) Clinical instruction in a recognized general hospital on selected cases in medicine and in surgery over a period of at least nine calendar months, including instruction in venereal diseases with any bearing on dentistry. Each of these courses should consist of not less than 50 meetings. It is desirable that the systematic courses in medicine and surgery and the clinical instruction should, so far as possible, be co-ordinated. The course of instruction in medicine, surgery, and pathology should normally be taken after the student has passed the examinations in human anatomy and physiology.

(v) That he has attended at a recognized dental school courses of instruction in: (*a*) Special anatomy, human and comparative. The course should comprise a minimum of 20 meetings of the class. (*b*) Practical normal and morbid histology (16 meetings); (*c*) Dental surgery (20 meetings). (*d*) Materia medica and therapeutics (10 meetings). (*e*) Metallurgy with practical work and demonstrations (16 meetings). (*f*) Dental mechanics and prosthetics (20 meetings). (*g*) Instruction in the use of anaesthetics employed in the practice of dentistry. (*h*) Instruction in radiology and its application to dentistry. (*i*) The principles of orthodontics (10 meetings).

(vi) That he has for at least two calendar years attended the practice of a recognized dental hospital or of the dental department of a general hospital recognized by a licensing body as forming part of a dental school.

(vii) That he has received for not less than 24 calendar months, or for 2,000 hours, practical instruction in dental mechanics. No portion of such practical instruction which is taken before registration shall be reckoned as a portion of the four years of professional study required, but in the event of hardship arising in a particular case, an application for exceptional treatment may be submitted to the Education Committee of the General Medical Council. It is recommended that practical instruction in dental mechanics shall be taken

at a recognized dental hospital and school. If any part of such instruction be taken by the candidate as a pupil with a registered dentist, the time devoted to it shall be at least twice the time required for the corresponding instruction taken at a dental school.

Professional Examinations

The examinations for a degree or licence in dentistry should be partly written, partly oral, and partly practical, and should include the following subjects: (*a*) Chemistry, Physics, and Biology in their bearing on medicine and dentistry. (*b*) Human anatomy, the oral examination in which should be conducted mainly on dissections, especially of the head and neck. (*c*) Physiology, the oral examination in which should include practical physiological tests. (*d*) Histology, which may be included in the examination in either anatomy or physiology. (*e*) General pathology, the oral examination in which should be conducted with the aid of specimens, including those of diseases connected with dentistry. (*f*) Bacteriology, the oral examination in which should include simple practical tests. (*g*) Medicine and surgery, the oral examinations in which should include a clinical examination of patients. (*h*) Special anatomy, human and comparative. (*i*) Dental mechanics, prosthetics and metallurgy, including practical tests. (*j*) Dental surgery, including special pathology and histology, materia medica and therapeutics, and the principles of orthodontics. (*k*) Practical dental surgery, which should include the usual dental operations—for example, filling and extraction of teeth and the giving of anaesthetics—and a clinical examination on the diagnosis and treatment of dental disease and abnormal conditions of the oral cavity.

A candidate should produce a certificate of having administered general anaesthetics on at least ten occasions.

ACKNOWLEDGEMENT

The detailed information published in this Educational Number of the *British Medical Journal* for the benefit of intending students of medicine and newly qualified practitioners has been revised throughout with the co-operation of the deans and secretaries of the medical schools and kindred institutions and of officials in the several public services, to all of whom we wish to acknowledge our indebtedness.

POST-GRADUATE COURSES AND LECTURES

SEPTEMBER AND OCTOBER, 1934

The following post-graduate courses and lectures to be held in London during September and October have been notified to the British Medical Association. Further particulars may be obtained direct from the hospital concerned, or, in the case of arrangements made by the Fellowship of Medicine (F.M.), from the Secretary of the Fellowship at 1, Wimpole Street, W.1.

Subject	Date	Place of Meeting	Nature of Instruction
Anaesthetics	From Sept. 1	West London Hosp. Post-Grad. College, Hammersmith Rd., W.6	Course
Chest Diseases	Sep. 24–29	Brompton Hospital, Fulham Rd.	F.M. course
Children's Diseases	Sept. 3–15	Infants Hospital, Vincent Sq.	" "
General ...	Sep. 17–29	Westminster Hospital, S.W.1	" "
Medicine ...	Sept. 4	11, Chandos Street, W.1	F.M. lecture-demonstration on pleural pain
"	Sept. 11	" "	Ditto on chronic cough
"	Sept. 18	" "	Ditto on hemiplegia
"	Sept. 25	" "	Ditto on paraplegia
Proctology...	Sep. 24–29	Gordon Hospital, Vauxhall Bridge Road, S.W.1	F.M. course
Urology ...	Sept. 8	National Temperance Hospital, Hampstead Road, N.W.1	F.M. lecture-demonstration
Anaesthetics	From Oct. 1	West London Hosp. Post-Grad. Coll., Hammersmith Rd., W.6	Course
Cardiology	Oct. 8–20	National Hospital for Heart Diseases, Westmoreland St., W.1	F.M. course
Chest Diseases	Oct. 27–28	Brompton Hospital, Fulham Road, S.W.3	" "
Children's Diseases	Oct. 1–13	Queen's Hospital, Hackney Road, E.2	" "
"	Oct. 22–Nov. 3	Hospital for Sick Children, Great Ormond Street, W.C.1	Course
Dermatology	Oct. 1–27	St. John's Hospital, 49, Leicester Square, W.C.2	F. M. course
General ...	Oct. 8–21	Metropolitan Hospital, Kingsland Road, E.8	" "
Gynaecology	Oct. 22–Nov. 3	Chelsea Hospital for Women, S.W.3	" "
Infectious Diseases	Oct.–Dec.	North-Eastern Fever Hospital, N.15	Course in fever hospital administration*
Medicine ...	Oct. 13	National Temperance Hospital, Hampstead Road, N.W.1	F. M. lecture-demonstration
"	Oct. 2	Medical Society of London, 11, Chandos St., W.1	Ditto on tremor
"	Oct. 9	" "	Ditto on ataxia
"	Oct. 16	" "	Ditto on giddiness
"	Oct. 23	" "	Ditto on convulsions
"	Oct. 30	" "	Ditto on headache
Neurology	Oct. 29–Nov. 3	West End Hospital for Nervous Diseases, 73, Welbeck St., W.1	F.M. course
Ophthalmology	Oct 15–Nov. 3	Royal Westminster Ophthalmic Hospital, W.C.2	" "
Pathology ...	Oct. 8–13	Hospital for Sick Children, Great Ormond Street, W.C.1	Course
Physical Medicine	Oct. 1–27	London Clinic, Ranelagh Road, S.W.1	F.M. Course
Psychotherapy	From Oct. 1	Institute of Medical Psychology, 6, Torrington Place, W.C.1	Course
Surgery ...	Oct. 20–21	Royal Albert Dock Hospital	F.M. course of clinical surgery

* Inquiries to be made to Medical Officer of Health, L.C.C., Public Health Department (Special Hospitals), Victoria Embankment, E.C.4.

Courses in general hospital practice may be begun at any time, and may be taken for any period, at the West London Hospital Post-Graduate College, Hammersmith Road, W.6.

In addition to the above courses the following for the higher qualifications have been arranged.

Subject	Date	Place of Meeting	Degree or Diploma
Medicine ...	Sep.-Oct.	Guy's Hospital Medical School,	M.R.C.P.
"	"	King's College Hospital Medical School	"
"	Sept.	Middlesex Hospital Medical School	"
Pathology ...	Sept.	University College Hospital Medical School	M.B., B.S.
Surgery ...	From Sept. 3	St. Mary's Hospital Medical School	Primary F.R.C.S.
"	"	Middlesex Hospital Medical School	" "
"	"	London Hospital Medical College	" "
"	Sept.–Nov.	Guy's Hospital Medical School	Primary and Final F.R.C.S.
"	From Sept.	St. Bartholomew's Medical College	" "
"	"	St. Thomas's Hospital Medical School	" "
"	Sept. 25–Oct 30	National Temperance Hospital	Final F.R.C.S. (F.M.)
"	Sept. 27–Nov. 1	" "	" "
"	From Sept.	London Hospital Medical College	Final F.R.C.S.
"	From Sept.	Dreadnought Hospital, Greenwich	" "
"	From Sept. 10	King's College Hospital Medical School	" "
"	Sept.	University College Hospital Medical School	M.S. or F.R.C.S.
Bacteriology	From Oct.	London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1	Dip. Bact.
Nose, Ear, and Throat	Oct. 1–27	Central London Throat, Nose and Ear Hospital, Gray's Inn Road, W.C.1	D.L.O.
Ophthalmology	From Oct. 15	Royal Eye Hospital, St. George's Circus, S.E.1	D.O.M.S.
"	From Oct.	Royal London Ophthalmic Hospital, City Road, E.C.1.	"
Public Health	From Oct. 1	London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1	D.P.H.
"	From Oct.	Royal Institute of Public Health, 23, Queen Sq., W.C.1	D.P.H.
Radiology ...	From Oct. 8	Cancer Hospital, Fulham Rd., S.W.3	D.M.R.
Surgery ...	From Oct. 22	King's College	Primary F.R.C.S.
Tropical Medicine	From Oct. 1	London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1	D.T.M. and H.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole Street, W.—*Infants Hospital,* Vincent Square, S.W.: All-day Course in Infants' Diseases. *Medical Society of London,* 11, Chandos Street, W.: Tues., 2.30 p.m., Lecture-Demonstration (illustrated by cases) by Dr. Clark-Kennedy on Pleural Pain. *National Temperance Hospital,* Hampstead Road, N.W.: Sat., 3 p.m., Lantern Demonstration on Some Practical Points in the Diagnosis and Treatment of Urological Cases, by Mr. H. P. Winsbury-White. *Panel of Teachers:* Individual clinics in various branches of medicine and surgery are available daily. Courses of instruction, clinics, etc., arranged by the Fellowship are open only to members and associates.

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

Surgeon Lieutenant Commander R. W. Mussen to be Surgeon Commander.

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Lieutenants A. E. Williams to the *Victory*, for Royal Naval Barracks; W. Gough to the *Effingham*.

ROYAL AIR FORCE MEDICAL SERVICE

Flight Lieutenant O. M. Fraser to No. 1 Armament Training Camp, Catfoss.

Flying Officer W. P. Stamm to No. 2 Armament Training Camp, North Coates Fitties.

British Medical Association

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE
TAVISTOCK SQUARE, W.C.1

Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate Westcent, London).
MEDICAL SECRETARY (Telegrams: Mediseca Westcent, London).
EDITOR, BRITISH MEDICAL JOURNAL (Telegrams: Aitiology Westcent, London).
Telephone numbers of British Medical Association and British Medical Journal, Euston 2111 (internal exchange, four lines).

SCOTTISH MEDICAL SECRETARY: 7, Drumsheugh Gardens, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 24361 Edinburgh.)
IRISH MEDICAL SECRETARY: 18, Kildare Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 62550 Dublin.)

Diary of Central Meetings

SEPTEMBER

20 Thurs. Insurance Acts Committee, 11.30 a.m.
27 Thurs. Medical Students and Newly Qualified Practitioners Sub-committee, 3.30 p.m.

VACANCIES

ACTON HOSPITAL, W.—J.R.M.O. (male, unmarried).
ALL SAINTS' HOSPITAL FOR GENITO-URINARY DISEASES, Austral Street, S.E.—R.H.S. (male).
BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—R.C.O. (male).
BELFAST: FORSTER GREEN HOSPITAL FOR CONSUMPTION AND CHEST DISEASES.—H.P.
BIRMINGHAM AND MIDLAND EYE HOSPITAL.—R.S.O.
BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—R.M.O. (male).
BURY INFIRMARY, Lancs.—H.S. to Special Departments.
CAMBRIDGESHIRE COUNTY COUNCIL.—County M.O.H. (male).
CANCER HOSPITAL (FREE), Fulham Road, S.W.—H.S.
CHELTENHAM GENERAL AND EYE HOSPITALS.—Hon. Pathologist.
COVENTRY AND WARWICKSHIRE HOSPITAL.—R.C.O. (male).
DEAL, WALMER, AND DISTRICT WAR MEMORIAL VICTORIA HOSPITAL.—Hon. P.
DERBY: DERBYSHIRE ROYAL INFIRMARY.—(1) H.S. for General Surgery and Ear, Throat, and Nose Department. (2) C.O. and Orthopaedic H.S.
DEVONPORT: ROYAL ALBERT HOSPITAL AND EYE INFIRMARY.—Assistant H.S. (unmarried).
DEWSBURY AND DISTRICT GENERAL INFIRMARY.—(1) H.S. (2) Hon. Visiting Orthopaedic S.
DONCASTER ROYAL INFIRMARY AND DISPENSARY.—(1) Two Hon. Assistant S. (2) H.S. (male).
DONCASTER RURAL DISTRICT COUNCIL.—M.O.H.
EAST HAM MEMORIAL HOSPITAL, Shrewsbury Road, E.—(1) H.S. to Special Departments. (2) C.O. (male).
EXETER: ROYAL DEVON AND EXETER HOSPITAL.—(1) H.S. (2) H.S. to Ear, Nose, and Throat Department. Males.
FIFE DISTRICT ASYLUM.—A.M.O.
GREAT YARMOUTH GENERAL HOSPITAL.—H.S. (male, unmarried).
HARROGATE AND DISTRICT GENERAL HOSPITAL.—(1) H.P. and C.O. (2) H.S. Males, unmarried.
HOVE GENERAL HOSPITAL.—R.M.O. (male).
HULL ROYAL INFIRMARY.—Hon. Assistant P.
HULL AND SCULCOATES DISPENSARY.—R.M.O.
INSTITUTE OF RAY THERAPY AND ELECTRO-THERAPY, Camden Road, N.W.—Part-time M.O. (male).
KING'S LYNN: WEST NORFOLK AND KING'S LYNN GENERAL HOSPITAL.—R.S.O.
LANCASHIRE COUNTY COUNCIL.—J.H.S. at Biddulph Grange Orthopaedic Hospital.
LEAMINGTON SPA: WARNEFORD GENERAL HOSPITAL.—H.S. (male, unmarried) for Casualty and Special Departments (combined posts).
LEICESTER ROYAL INFIRMARY.—(1) Two H.S. (2) Two C.O. (3) H.P. (4) Two Junior Resident Anaesthetists.
LUTON: BUTE HOSPITAL.—H.S. (male).
MANCHESTER: ANCOATS HOSPITAL.—(1) Whole-time Assistant Pathologist. (2) R.M.O. (3) H.P. (4) Medical Registrar.
MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.—H.S.
MANCHESTER CITY.—Second R.A.M.O. (unmarried) at Abergele Sanatorium, North Wales.
MANCHESTER: ROYAL MANCHESTER CHILDREN'S HOSPITAL.—Two A.M.O.'s (non-resident) for Out-patients' Department.
MANCHESTER: ST. MARY'S HOSPITALS.—(1) Two H.S. at Whitworth Street West Hospital (Maternity). (2) Three H.S. at Whitworth Park Hospital (Two for Gynaecological and one for Children's Departments).
MARGATE AND DISTRICT GENERAL HOSPITAL.—R.M.O. (male).
MARKET DRAYTON: CHESHIRE JOINT SANATORIUM.—R.A.M.O.
MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Hon. S.
MIDDLESEX COUNTY COUNCIL.—J.A.R.M.O. at North Middlesex County Hospital.
NATIONAL TEMPERANCE HOSPITAL, Hampstead Road, N.W.—R.M.O. (male).
NEWCASTLE THROAT, NOSE, AND EAR HOSPITAL.—H.S.
NORTHAMPTON GENERAL HOSPITAL.—(1) H.P. (2) Two H.S. (3) H.S. to Ear, Nose, and Throat Department. (4) C.O. Males.
NORWICH: NORFOLK AND NORWICH HOSPITAL.—(1) C.O. and H.S. (2) H.S. to Special Departments (Ear, Nose, and Throat, and Ophthalmic). Males.
PETERBOROUGH CITY.—Clinic M.O. (male).
POOLE: CORNELIA AND EAST DORSET HOSPITAL.—H.S. (male, unmarried).
PRINCESS BEATRICE HOSPITAL, Earl's Court, S.W.—(1) R.M.O. (2) H.P. and C.O. (3) H.S. and C.O. Males.
QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) H.P. (2) C.O.
RADIUM INSTITUTE, Riding House Street, W.—H.S. (unmarried).
RICHMOND, SURREY: ROYAL HOSPITAL.—J.H.S. (male, unmarried).
ROYAL NAVAL DENTAL SERVICE.—Three Vacancies as Dental Officer.
ROYAL NORTHERN HOSPITAL, Holloway, N.—(1) H.S. (2) Obstetric H.S.
ST. BARTHOLOMEW'S HOSPITAL, E.C.—Whole-time Registrar in Cancer Department.
ST. MARY'S HOSPITAL, W.—Part-time Assistant Director of Venereal Diseases Department.
ST. PETER'S HOSPITAL FOR STONE, ETC., Henrietta Street, W.C.—H.S. (male).
SALFORD ROYAL HOSPITAL.—(1) Two H.S. (2) C.H.S. Males. (3) Hon. Assistant S.
SALVATION ARMY MOTHERS' HOSPITAL, Clapton, E.—J.R.M.O. (female).
SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—H.S.
SCARBOROUGH HOSPITAL AND DISPENSARY.—H.S. (female).
SHEFFIELD: CHILDREN'S HOSPITAL.—(1) H.S. (2) H.P. Males, unmarried.
SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—R.M.O. at Firth Auxiliary.
SHEFFIELD RADIUM CENTRE.—A.M.O.
SHREWSBURY: ROYAL SALOP INFIRMARY.—R.H.P. (male).
STOKE-ON-TRENT: NORTH STAFFORDSHIRE ROYAL INFIRMARY.—Assistant H.P.
SWANLEY: ALEXANDRA HOSPITAL FOR CHILDREN WITH HIP DISEASE.—R.A.M.O. (unmarried).
WATFORD AND DISTRICT PEACE MEMORIAL HOSPITAL.—H.S. (female).
WEST BROMWICH AND DISTRICT GENERAL HOSPITAL.—(1) H.S. (2) H.P. (3) C.O.
WEST LONDON HOSPITAL, Hammersmith, W.—(1) H.P. (2) H.S. (3) H.S. for Throat, Nose, and Ear Department. Males.
WINSLEY SANATORIUM, near Bath.—Whole-time A.R.M.O. (male).
WORTHING HOSPITAL.—H.S.
WREXHAM AND EAST DENBIGHSHIRE WAR MEMORIAL HOSPITAL.—Two R.H.S.

CERTIFYING FACTORY SURGEON.—The appointment at Holt (Norfolk) is vacant. Applications to the Chief Inspector of Factories, Home Office, Whitehall, S.W.1, by September 11th.

This list is compiled from our advertisement columns, where full particulars are given. To ensure notice in this column advertisements must be received not later than the first post on Tuesday mornings. Further unclassified vacancies will be found in the advertising pages.

APPOINTMENTS

SCHOLEFIELD, B. G., M.D., M.Ch., F.R.C.S., Medical Referee under the Workmen's Compensation Act, 1925, for the Great Malvern, Hay, Hereford, Ledbury, and Leominster County Court Districts (Circuit No. 22).

STEWART, Matthew J., M.B., F.R.C.P., F.R.F.P.S., Honorary Pathologist, Leeds Public Dispensary and Hospital.

CERTIFYING FACTORY SURGEONS.—T. B. Newman, L.R.C.P.I. and L.M., L.R.C.S.I. and L.M., for the Mullion District (Cornwall); J. C. C. Poole, M.B., B.Ch., for the Crowborough District (Sussex).

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTH

JOHNSON.—On August 19th, at Lorna Lodge Nursing Home, to Annie T. Leigh, M.B., Ch.B., M.R.C.S., L.R.C.P., wife of J. R. Johnson of School Road, Sale, Cheshire, a daughter. (See Deaths.)

DEATH

JOHNSON.—On August 24th, at a nursing home, Annie T. Leigh, M.B., Ch.B., M.R.C.S., L.R.C.P., the beloved wife of J. R. Johnson.

[The present issue being the Annual Educational Number, much current material is held over, and neither the "Supplement" nor the "Epitome of Current Medical Literature" is published this week.]

The British Medical Association:

ITS AIMS, WORK, AND CONSTITUTION.

The British Medical Association, as stated in our introductory article on the Profession of Medicine, was founded in 1832 to promote the medical and allied sciences, to maintain the honour and interests of the profession, and to foster a feeling of friendship among its members. To attain these objects it holds meetings, local and central, for the discussion of medical and scientific subjects and of professional affairs; it publishes the *British Medical Journal*; it maintains a reference and lending library; it has instituted lectures, and scholarships and grants in aid of research. It concerns itself with every side of medical work—science, clinical medicine, public health, and the material interests of professional life. In addition to its work for them collectively and sectionally, the Association helps its members individually as to professional problems or difficulties, and the rendering of such help to its individual members forms a not inconsiderable part of the Association's daily work. The Association is the oldest, largest, and most powerful British organization devoted to the welfare of the medical profession. Its membership is now 34,750. It has a fine building in Tavistock Square, London, for its headquarters. These premises, designed by Sir Edwin Lutyens, R.A., were formally opened in 1925 by His Majesty the King, Patron of the Association; and the beautiful wrought-iron gates erected as a memorial to the 574 members who fell in the war, by which the main quadrangle is completed, were dedicated on that occasion by the Archbishop of Canterbury. The need for larger accommodation had become insistent owing to the remarkable growth in the central work of the Association during recent years, which had far outstripped the capacity of the premises in the Strand.

British Medical Association House: Court of Honour

Constitution and Administration

The Association has Branches and Divisions throughout Great Britain and Ireland, and also in the Dominions, Colonies, and Dependencies. Thus, there are 47 Branches and 205 Divisions in the British Isles, and 86 Branches and 51 Divisions in the British Empire over-seas. The Branches in Australia and South Africa are linked up in Federal Councils for these respective areas. To the Association there is affiliated the Canadian Medical Association.

Members of Divisions elect representatives on the Branch Councils and also a member or members of the Representative Body, which is the governing body of the Association and determines its policy.

The Council is the executive of the Association. It is elected partly by the Divisions and Branches and partly by the Representative Body, and includes representatives of the Navy, Air Force, Army, and Indian Medical Services elected by the Representative Body. The Representative Body and Council elect standing committees to take charge of different subjects. Among these may be mentioned the Science, Medico-Political, Ethical, Hospitals, Public Health, and Naval and Military Committees. There are Committees also for the Dominions, Scotland, Ireland, and Wales; and for the working machinery of the Association, such as the Organization, Finance, and Journal Committees. The Insurance Acts Committee, elected partly by the Association and partly by insurance medical practitioners, is financed by the Association; it is the recognized executive and mouthpiece of the insurance practitioners of Great Britain and Northern Ireland.

Privileges of Members

A member of the Association has the right—

1. To attend the annual and other general meetings of the Association and the meetings of the Division and Branch to which he or she belongs.
2. To take part by personal vote (or in some Divisions by voting paper) in the election of the representative of his or her Division in the Representative Body, and also in the election of members of the Council.
3. To receive by post the *British Medical Journal*, published weekly, which gives a full record, with commentary, of progress in clinical and scientific medicine, and of medico-political affairs and medical economics.
4. To receive the help and advice of the central office in any professional difficulty.
5. To use the Library as a reading room, and to borrow current medical or scientific books on payment of postage. Besides modern works and periodical medical literature—foreign as well as English—the library contains many books of historic interest.

The full benefits of the Association can only be secured by the co-operation of large numbers of the medical profession, for the greater the membership and the funds the more efficient and influential the organization. The Association has been the direct means of benefiting every class of medical men and medical women. In seeking new members it looks not only to the older practitioners but also and especially to those recently qualified. To these a generous concession is made as regards subscription, and there is a special claim to their recognition of the work of the Association in improving the conditions under which they may hold appointments in the public services or in civil life. The Association's work for the Services is well known. It feels a special responsibility towards those members of the profession who by reason of their position are precluded from taking common action.

Subscriptions and Applications for Membership

The ordinary subscription to the British Medical Association is 3 guineas a year for members resident in the British Isles, but this is subject to various exceptions. Thus, newly qualified practitioners elected within two years of registration pay half this sum up to the end of the fourth year after registration; medical officers on the active list of the R.N., R.A.F., R.A.M.C. (Regular), and I.M.S. pay 2 guineas; concessions are made also to members (in the British Isles) of forty years' standing, to members of ten years' standing who have retired from practice, to medical married couples residing together, and to certain whole-time teachers and research workers. The ordinary subscription for members living abroad is 1½ guineas, but some Branches have special local subscriptions. A member elected after June 30th pays half the subscription for that year.

All duly qualified British medical practitioners are eligible for election. Full particulars can be obtained from the Medical Secretary, B.M.A. House, Tavistock Square, London, W.C.1; the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh; or the Irish Medical Secretary, 18, Kildare Street, Dublin.

TO THE MEDICAL PROFESSION

THERE is little need to remind you of the injurious properties of cheap harsh tea. It is against those deceptive "health" teas that we issue this urgent warning. What IS "Health" tea? We have proved it to be a mere phrase totally devoid of meaning. These so-called "health" teas, which claim to have been "made safe," actually contain 50% to 100% more tannin than "The Doctor's China Tea" which comes to you in its natural state. Do you know that "The Doctor's China Tea" has been regularly prescribed for over a quarter of a century? If you properly value your health as well as the safety of your patients you will be doubly wise to insist upon the sole and original tannin-free tea. May we send you a free sample by way of introduction?

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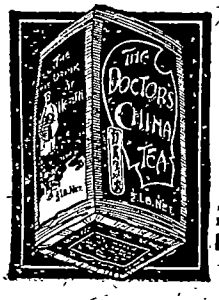

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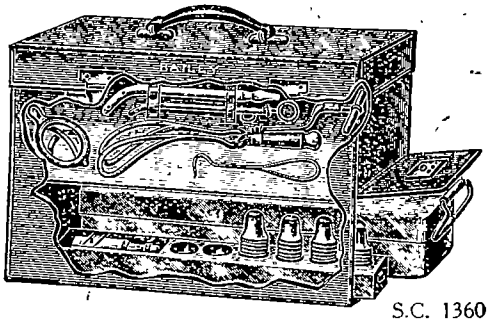

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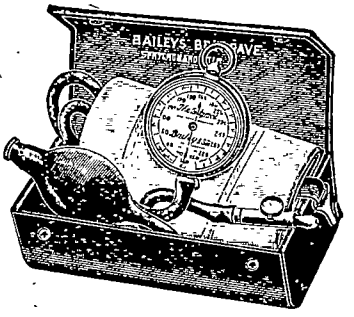

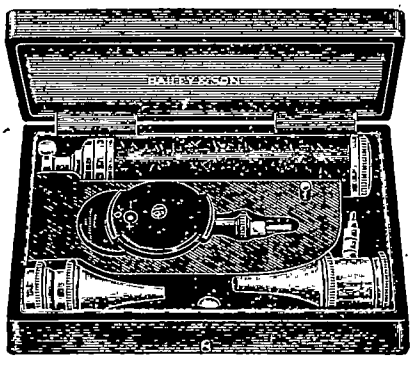

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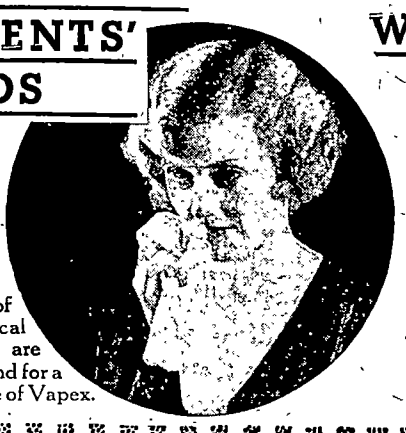

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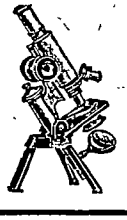

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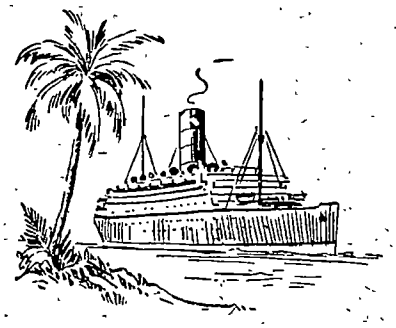

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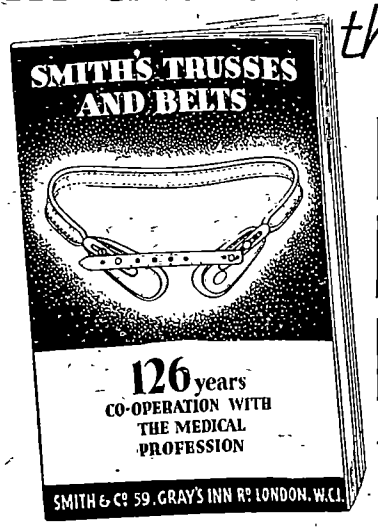

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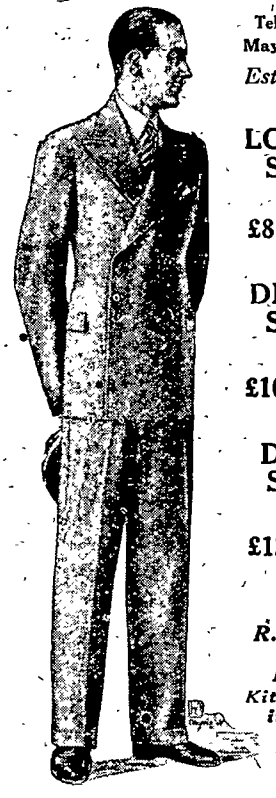

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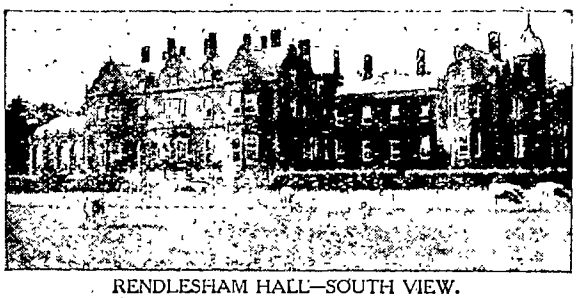
Rendlesham Hall which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

Illustrated booklet giving particulars as to terms, etc., can be had on application to the **RESIDENT MEDICAL SUPERINTENDENT.**

Telegrams and Telephone: Wickham Market 16.
(Toll Call from London.)

Proprietors: The Norwood Sanatorium, Limited.



RENDLESHAM HALL—SOUTH VIEW.

SHEEP ON THE GOLF LINKS.

BOWDEN HOUSE,

HARROW-ON-THE-HILL.

A NURSING HOME OPENED IN 1911 FOR THE INVESTIGATION AND TREATMENT OF FUNCTIONAL NERVOUS DISORDERS OF ALL TYPES.

No cases under certificate. Thorough clinical and pathological examinations. Psychotherapeutic treatment, occupation, and recreation as suited to the individual case.

PARTICULARS FROM THE MEDICAL SUPERINTENDENT. *Telephone and Telegrams:* BYRON 1011.

CALDECOTE HALL

Nr. NUNEATON, WARWICKSHIRE.

Phone: NUNEATON 241

Particulars may also be had from the Secretary, 40, Marsham Street, London, S.W.1.

ALCOHOLISM, NEURASTHENIA, Etc.
(For Men)

At this beautifully situated country mansion in Warwickshire (2 hrs. from London on L.M.S.R.), the residential treatment of Alcoholism, Neurasthenia, Insomnia, and Nervous breakdown is carried out on the most modern principles under the supervision of the Res. Med. Supt. Recreation and graduated occupational therapy are available in the extensive secluded grounds. Prospectus from A. E. CARVER, M.D., D.P.M., Resident Medical Superintendent.

WOODLANDS PARK

GREAT MISSENDEN, BUCKS.

A Beautifully situated Home, 550 feet above sea-level, on Southern Chilterns. 90 acres, Garden, Woods, and Park.

For INSOMNIA, NEURASTHENIA, other FUNCTIONAL NERVOUS DISORDERS, and CONVALESCENCE.

Fees from 8 guineas.

Telephone: 91 Gt. Missenden. *Apply:* C. W. J. BRASHER, M.D.

THE ROYAL EARLSWOOD INSTITUTION

FOR MENTAL DEFECTIVES, REDHILL, SURREY.

(Formerly the EARLSWOOD ASYLUM.)

FOR THOSE REQUIRING CONTROL with EXPERT SUPERVISION and needing SPECIAL TRAINING in useful occupations. *SCHOOLS, FARMING, and various TRADE WORKSHOPS.* Inclusive fees from £110 p.a. *THOSE UNABLE TO PAY* admitted by votes of subscribers, with part payment towards cost.

RECREATIONS: ALL outdoor games. EXCELLENT BAND by Male Staff for Concerts, Dancing, etc.

Apply, THE MEDICAL SUPERINTENDENT, Earlswood, Redhill, Surrey, or to the Secretary, Mr. H. STEPHENS, 14–16, Ludgate Hill, E.C.4.

Telephone: REDHILL 344. *Telephone:* CITY 4697.

The MAUDSLEY HOSPITAL

DENMARK HILL, S.E.5.

Telephone: RODNEY 2101.

A CLINIC instituted by the London County Council for Treatment of NERVOUS and CURABLE MENTAL DISORDER. Voluntary patients ONLY received.

NEW OUT-PATIENTS: MEN — Mondays and Thursdays, 2 p.m. WOMEN—Tuesdays and Fridays, 2 p.m. CHILDREN—Mondays and Fridays, 10 a.m.

IN-PATIENTS: (*a*) 229 beds (both sexes) in wards or separate rooms, including 35 beds in a ward of King's College Hospital, which is in use as a temporary annex of the Maudsley Hospital. (*b*) 13 private rooms (for ladies) with special sitting rooms, garden, and dietary.

TERMS

(*a*) £5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.

(*b*) £6 6s. a week.

Terms include (with rare exceptions) all forms of treatment, for which unusual facilities exist—there being a staff of consultant specialists, and the central laboratory of London County Mental Hospitals being attached to the Hospital.

Inquiries of EDWARD MAPOTHER, M.D., F.R.C.P., F.R.C.S., Medical Superintendent.

SPRINGFIELD HOUSE,

Near BEDFORD. (Phone 3417.)

For Mental Disorders with or without Certificates.

Resident Physician: CEDRIC W. BOWER.

Ordinary Terms: Five Guineas per week.

(Including Separate Bedrooms where suitable.)

Interviews in London by appointment.

ST. ANDREW'S HOSPITAL

FOR MENTAL DISORDERS,

NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary patients, who are suffering from incipient mental disorders or who wish to prevent recurrent attacks of mental trouble, temporary patients, and certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms, with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital, from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate, a mile of sea coast forms the boundary. Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 2356 and 2357 Northampton), who can be seen in London by appointment.

COURT HALL, KENTON, near EXETER,

for the treatment of eight Ladies, voluntary, temporary, or certified patients. Large gardens and own dairy.

CLIFFDEN, TEIGNMOUTH, for early and convalescent cases. A well-appointed house, with spacious balconies and extensive views of the South Devon Coast. Sub-tropical gardens; own dairy in 25 acres. Private road to beach.

Resident Physicians { BERTHA M. MULES, M.D., B.S. / ANNE S. MULES, M.R.C.S., L.R.C.P.

Telephones: Starcross 59, Teignmouth 289.

THE COPPICE, NOTTINGHAM.

HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary and Temporary Patients received.

Tel. 64117. *For terms, etc., apply to the Medical Superintendent.*

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." Telephone: NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses. Conveniently situated four miles from Charing Cross. Easy access from all parts. Six acres of ground highly situated, facing Finsbury Park. Private Suites. Voluntary Patients and Temporary Patients received without Certification.

Convalescent Home, KEARSNEY COURT, DOVER. For further particulars, apply to the Medical Superintendent.

HAYDOCK LODGE,

NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES suffering from mental and nervous diseases, either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

CHISWICK HOUSE

A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders in both Sexes.

Now removed to

CHISWICK HOUSE, PINNER, MIDDLESEX

Telephone: PINNER 234

A modern country house, 12 miles from Marble Arch, in beautiful secluded grounds. Fees from 10 guineas per week, inclusive. Cases under certificate and Voluntary Patients received for treatment. Special provision for "Temporary" patients under the new Mental Treatment Act.

Douglas Macaulay, M.D., D.P.M.

BARNWOOD HOUSE,

GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L.M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 300 acres. Voluntary Patients of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Patients is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Medical Supt.
Telephone: No. 6207, Barnwood.

HILL END HOSPITAL

FOR MENTAL AND NERVOUS DISORDERS

(20 miles from London)

Ladies suffering from all forms of MENTAL ILLNESS are received for treatment, on modern lines, as Voluntary, Temporary, or Certified Private Patients at the Hill End Hospital. Convalescent or mild cases can be treated in a delightful country mansion, with extensive grounds known as

HIGHFIELD HALL,

situate about a mile away from the Hospital. FEES: TWO TO THREE GUINEAS PER WEEK.

For further particulars apply to the Medical Supt., W. J. T. KIMBER, L.R.C.P., D.P.M.,

ST. ALBANS, HERTS.

BAILBROOK HOUSE,

BATH.

A PRIVATE HOSPITAL for the care and treatment of persons with mental and nervous disorders.

Certified, Voluntary, and Temporary Patients received. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2278).

For terms apply S. J. GILFILLAN, O.B.E., M.B., C.M.Edin., Resident Physician.
Telephone No.: Batheaston 8189.

FENSTANTON,

CHRISTCHURCH ROAD,

STREATHAM HILL, S.W.2.

A Private Home for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Patients. Large Mansion with 12 acres of ground. (See *Medical Directory*, p. 2268.) Apply, J. H. EARLS, M.D., Resident Physician. *Telephone*: Tulse Hill 7181.

WYE HOUSE, BUXTON.

For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Borders received. Situated 1,200 ft. above sea-level, facing S. 14 acres of grounds. — For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D. Nat. : Tel. 130.

Tel. and Telegrams: "Haynes, Brentwood, 45."

Littleton Hall, Brentwood, Essex.

Large grounds, 400 ft. above sea. HOME for ladies Mentally afflicted. Voluntary Boarders received. Station: Brentwood and Shenfield 1 mile. Liverp'l St. 26 min. Apply, Dr. HAYNES.

THE LONDON SCHOOL OF DERMATOLOGY

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, LEICESTER SQUARE, W.C.2

The CHESTERFIELD LECTURES, constituting a systematic Course in Dermatology, will be given at 5 p.m. during October and November, 1934, and January and February, 1935.

SYLLABUS—WINTER SESSION—1934-5 (January and February Syllabus will appear later).

1934.	Subject.	Lecturer.
Oct. 2 Tues.	Syphilis	Dr. A. C. Roxburgh.
„ 4 Thurs.	Ringworm Infections	Dr. J. M. H. MacLeod.
„ 9 Tues.	Animal Diseases Communicable to Man	Dr. M. Sydney Thomson.
„ 10 Wed.	Introduction to Histopathology of the Skin	Dr. I. Muende.
„ 16 Tues.	Seborrhoea and Seborrhoeic Dermatitis	Dr. G. B. Dowling.
„ 17 Wed.	Histopathology of Common Skin Diseases	Dr. I. Muende.
„ 23 Tues.	Acne and Rosacea	Dr. H. D. Haldin-Davis.
„ 25 Thurs.	The Sarcoids and Lupus Pernio	Dr. A. M. H. Gray.
Oct. 30 Tues.	Psoriasis	Dr. H. W. Barber.
Nov. 1 Thurs.	Eczema	Dr. W. Griffith.
„ 6 Tues.	Tuberculosis Cutis	Dr. J. E. M. Wigley
„ 7 Wed.	Histopathology of the Chronic Granulomata	Dr. I. Muende.
„ 8 Thurs.	Dermatological Neuroses	Dr. W. J. O'Donovan.
„ 13 Tues.	Malignant Growths of the Skin	Dr. H. MacCormac.
„ 14 Wed.	Histopathology of New Growths of the Skin	Dr. I. Muende.
„ 20 Tues.	Cutaneous Affections due to Sunlight	Dr. Hugh Gordon.
„ 22 Thurs.	Eczema and Papular Urticaria	Dr. W. N. Goldsmith.
„ 27 Tues.	Virus Diseases of the Skin	Dr. R. T. Brain.
„ 29 Thurs.	Electro-Therapeutics	Dr. W. K. Sibley.

An Examination will be held at the end of the Course, and the CHESTERFIELD MEDAL will be awarded to the best candidate, provided the required standard is reached. An intensive Course will also be held during the month of May.

CLINICS.—Instruction will be given daily in the Out-Patient Department, as follows:

Monday, 2 p.m. ... Dr. Griffith.	Wednesday, 2 p.m. .. Dr. Brain.	Friday, 2 p.m. ... Dr. Sibley.
6 p.m. ... Dr. Dore.	6 p.m. ... Dr. Dowling.	6 p.m. ... Dr. Brain.
Tuesday, 2 p.m. ... Dr. Goldsmith.	Thursday, 2 p.m. ... Dr. Corsi.	Saturday, 2 p.m. ... The Medical Registrar.
6 p.m. ... Dr. Wigley.	6 p.m. ... Dr. Roxburgh.	

LABORATORY.—Arrangements can be made for Classes, individual instruction, or for research work. For particulars and fees apply to the Dean.

FEES.—For Hospital Practice, including Lectures, One Guinea per month. *Registered Medical Students may attend the Lectures free on signing their names and giving the name of their Hospital.*

Medical Practitioners will be welcome as occasional visitors on presentation of their cards. For further particulars apply to Dean or Secretary.

LEONARD G. R. TURPIN, Secretary. J. E. M. WIGLEY, M.B., Dean.

THE HOSPITAL FOR SICK CHILDREN

GREAT ORMOND STREET, LONDON, W.C.1

This Hospital contains 252 beds with an average admission of over 7,000 in-patients per annum; whilst in the out-patient department about 30,000 new patients are seen each year. The Medical School is recognized by the Universities of Oxford, Cambridge, and London, and by the Conjoint Board of England as a teaching institution where students receive instruction in the treatment of Diseases of Children for such a period as is required by the Regulations of the Conjoint Board.

POST-GRADUATE INSTRUCTION, open to all qualified medical men and women, is given daily in the wards, out-patient department, operating theatre, and post-mortem room by members of the visiting staff. Clinical clerkships in the wards and clinical assistantships in the out-patient department are also available for post-graduate students. **Fees:** One month's ticket £2 2s. Three months' ticket £5 5s. Perpetual ticket £10 10s. Reduced fees for Clinical Clerks and Dressers for one month's attendance £1 1s. Clerks attend for about four hours daily.

POST-GRADUATE COURSES ON DISEASES OF CHILDREN are held twice yearly in spring and autumn. Each course lasts a fortnight and consists of 30 Clinical lectures and demonstrations and 6 Pathological demonstrations. Fee for each course £6 6s.

The next course will start on October 22nd and end on November 3rd, 1934.

SPECIAL COURSES IN PRACTICAL PATHOLOGY, lasting one week and consisting of 6 demonstrations, are also given at the Hospital. These courses demonstrate such methods as can be usefully carried out away from a laboratory, and which are of general application. Fee for each course £2 2s.

The next of these courses will commence on October 8th, 1934.

Further information may be obtained from the Secretary at the Hospital.

H. F. RUTHERFORD, Secretary. W. G. WYLLIE, M.D., F.R.C.P., Dean.

BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS

58, Queen Anne Street, LONDON, W.1

EXAMINATIONS FOR THE MEMBERSHIP ARE HELD IN JANUARY AND JULY.—Applications to sit for the examinations must be made at least two months before the Examination as the Clinical record of the candidate must be investigated by the Examination Committee and, if approved, the case records submitted one month prior to the Examination.

In the case of candidates from overseas, applications should be made still earlier.

EXAMINATIONS FOR THE DIPLOMA ARE HELD IN MARCH AND OCTOBER.—Applications must be made at least one month prior to the date of the Examination.

Copies of the By-laws and Regulations for the Membership and the Diploma can be obtained from the Honorary Secretary, at the above address.

THE
METROPOLITAN EAR, NOSE, & THROAT HOSPITAL
(1838) (INCORPORATED),
FITZROY SQUARE, LONDON, W.1.

FACILITIES FOR CLINICAL WORK are afforded to Medical Practitioners and Students. Fee for one month, 3 Guineas; for three months, 5 Guineas.

PRACTICAL DEMONSTRATIONS are given daily (Saturdays excepted) at 3 p.m., in the manipulation of instruments used in the Diagnosis and Treatment of Diseases of the Ear, Nose, and Throat.

CLINICAL ASSISTANTS are appointed as vacancies occur, and have responsible duties.

Further particulars may be obtained from the Secretary.

L. L. PHILLIPS.

WEST END HOSPITAL FOR NERVOUS DISEASES.
OUT-PATIENT DEPARTMENT, WELBECK STREET, W.1.
IN-PATIENT DEPARTMENT, GLOUCESTER GATE, REGENT'S PARK, N.W.1.
Recognized by the University of London and the Conjoint Board.

Courses of **SPECIAL CLINICAL DEMONSTRATIONS** on selected cases and short concentrated courses for general practitioners as advertised by the Fellowship of Medicine. Next course October 29th to November 3rd.

The general practice of the hospital is conducted daily (Saturdays excepted).

The Savill Prize (value £15) and medal is offered biennially for the best thesis on a neurological subject submitted by Post-Graduates who have attended the hospital practice on not less than 10 occasions.

A limited number of appointments as Hon. Clinical Assistants are open to Post-Graduates.

The Senior and Junior House Physicians are appointed every six months, with remuneration at the rate of £150 and £100 per annum respectively.

For particulars of the above apply to C. WORSTER-DROUGHT, M.D., M.R.C.P., Dean, or to the Secretary of the Hospital at 73, Welbeck Street, W.1.

POST-GRADUATION SCHOOL
CENTRAL LONDON THROAT, NOSE & EAR HOSPITAL
GRAY'S INN ROAD, LONDON, W.C.1

CLINICAL TEACHING covering every aspect of the Specialty given daily in the Out-patient Department and the In-patient Theatres.

CLINICAL ASSISTANTSHIPS available for periods of 3, 6, or 12 months. Lectures each Friday 4 p.m.

COURSES IN METHODS OF EXAMINATION AND DIAGNOSIS at frequent intervals.

WEEK-END COURSE FOR GENERAL PRACTITIONERS 1st and 2nd December, 1934.

INTENSIVE COURSES (4 weeks), including lectures and demonstrations; Anatomy and Physiology; Operative Surgery; Peroral Endoscopy and Pathology and Bacteriology Classes given in May and October each year.

The teaching provided covers all the requirements of students intending to sit for the D.L.O. (R.C.P.&S.Eng.).

Full Syllabus obtainable from J. D. McLAGGAN, M.A., F.R.C.S., *Dean.*

NATIONAL HOSPITAL FOR DISEASES OF THE HEART
WESTMORELAND STREET, W.1.

The Clinical Practice of the Hospital in the Out-patient Department and the Wards is open to Post-Graduates. Fees: One Month, £2 2s.; Three Months, £5 5s.

Under-Graduates who have completed their fourth year are admitted to the Practice of the Hospital at specially reduced fees.

Special Courses of two weeks' duration are held in January, June–July, and October. Fee £7 7s.

Further particulars may be obtained on application to the Dean or the Secretary at the Hospital.

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON)

THE WINTER SESSION BEGINS ON OCTOBER 1st.

The entire Medical Curriculum can be taken at this School. Annual value of Scholarships and Prizes £1,000. Large Research Funds.

ENTIRE CURRICULUM.—THE PROVISION WHEREBY ALL THE SUBJECTS OF THE CURRICULUM, INCLUDING CHEMISTRY, PHYSICS AND BIOLOGY, FOR THE PRE-MEDICAL EXAMINATION, ARE TAUGHT WITHIN THE PRECINCTS of the HOSPITAL and MEDICAL SCHOOL, and every effort made to encourage co-ordination, ensures that the student, instead of proceeding to the study of the various subjects as if they were isolated and having little or no relation to each other, is taught each subject by professors and lecturers who are instructing medical students only, and are in close touch with all the other departments of the School. The rebuilding of the Hospital and completion of new buildings in connection with the Medical School have now reached such a point that those working in the Institution have facilities equal to, or superior to those to be found in any other hospital in the United Kingdom, and the rapid progress which is being made with the remaining buildings promises even greater facilities in the immediate future. The new buildings are not confined to the wards, but include a new Out-patients' Department, the Institute of Biochemistry, new Departments for Diseases of Children, Neurology, Dermatology, etc. In addition there will be open during the session a new Unit devoted to Clinical Research; it will include six small self-contained wards and a large Clinical Lecture Theatre. The following description of the work in various departments is designed to show how co-ordination is carried out.

CHEMISTRY is taught by Professor W. B. Tuck, and the class-room and laboratories are in the immediate vicinity of those for anatomy, physiology, pharmacology, pathology, and bacteriology. This leads to a close association with these departments, and the student realises he is not learning just the chemistry which he requires for his first professional examination, but is acquiring knowledge which he will need and have to apply in later years.

THE PHYSICS DEPARTMENT is under the charge of Professor Sidney Russ, who is also Physicist to the Hospital and engaged in research work on the measurements and dosage of X-ray and Radium emanations. He is therefore in close touch with the departments of physiology and pathology, and takes an active part in departments for clinical therapeutics. Under his direction the student will realise at once that he is not studying an isolated subject for the purpose of training his mind or simply to comply with regulations and pass an examination, but is in touch with a subject which will be of great and increasing importance in the proper understanding of his work in later years.

BIOLOGY.—The Lecturer on Biology is Dr. J. H. Woodger, who holds a University Readership in this subject. His teaching in biology is characterized by co-ordination with other departments, and the bearing of the subject on the later stages of the curriculum is emphasized. Not only is the subject taught as an introduction to the study of Anatomy and Physiology, but the increasing importance of a knowledge of the lower forms of vegetable life and of the protozoa in the causation of disease and the study of insect carriers of human diseases is emphasized by co-ordination with the Pathological Institute.

IN THE DEPARTMENT OF ANATOMY, under the direction of Professor Thomas Yeates, with the general scientific study of Anatomy and its wider Biological aspects, the relation of structure to function and pathology is not lost sight of. Facts of clinical medicine and surgery, of pathology, biology, and physiology, are included in the teaching in order to emphasize the significance of anatomical points. By classes in Applied Medical and Surgical Anatomy the study of this subject is continued in the later stages of the student's career.

THE TEACHING OF PHYSIOLOGY is in the hands of Professor Samson Wright, and the department is in close touch with those for the teaching of both the preliminary and final subjects of the curriculum. It is impressed upon the student in this department that he cannot be a good clinician unless he obtains a sound knowledge of Physiology, and physiological teaching is made to overlap the later periods of tuition by lectures on Applied Physiology which are given by the Professor to students during their Clinical Period. Again, while in the wards the student has continuous opportunities of applying what he has learnt in the Physiological department, and his physiological knowledge is further extended, notably in the study of PHARMACOLOGY and in the CARDIOGRAPHIC Department, where he has opportunities of studying the electrical conditions of the heart both in health and disease.

IN THE BLAND-SUTTON INSTITUTE OF PATHOLOGY all the departments of the Medical School are brought in touch. Here the student learns the SCIENCE OF DISEASE. The teaching of Pathology is in the hands of Professor J. McIntosh, and under his tuition the student is made to realise that Pathology and Medicine are one and that a clear knowledge of Pathology and Bacteriology is essential for the prevention, diagnosis, and treatment of disease. The teaching of pathology is brought into the closest touch with clinical teaching, and the student sees the practical application of the sciences in which he has been instructed in the earlier years of the curriculum—chemistry, physics, biology, anatomy, and physiology.

THE COURTAULD INSTITUTE OF BIOCHEMISTRY is a building fully equipped with laboratories for teaching and biochemical research. Professor E. C. Dodds, who is in charge of the Department, holds complete courses in Biochemistry for students, both in their early years and during their period of instruction in the wards. In addition to this the student here acquires constant practical experience of the important modern chemical investigations necessary for the detection of disease and the study of its evolution. Several valuable post-graduate appointments in this Institute become available to students showing special ability in this direction.

CLINICAL TEACHING is carried out in the general wards and out-patients' departments, and in the special departments, all of which are in close touch with the scientific departments in the School. The student has ample opportunities for carrying out the physical examination of patients, and with his training on the scientific side combines instruction in the Art of Medicine by constantly being brought in contact with patients and being made to realise the human side of his professional work.

There are ample clinical appointments for all students, and 33 Resident appointments are open annually to students of the School who have obtained their degrees or diplomas. In addition, ten Registrars are appointed annually.

THE SOCIAL AND ATHLETIC side of the student's life is also studied, and these facilities include a Medical Society, a Common Room Society, and Athletic grounds. The Clubs include Rugby Football, Association Football, Golf, Cricket, Hockey, Sailing, etc. A Squash Racket Court is also available.

Write for Prospectus to the DEAN, H. E. A. BOLDERO, M.A., D.M., F.R.C.P., The Medical School, Middlesex Hospital, London, W.1.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE

(UNIVERSITY OF LONDON)

WINTER SESSION BEGINS OCTOBER 1st, 1934

THE HOSPITAL has **762 Beds** and the **MEDICAL COLLEGE** contains large Lecture Rooms and Laboratories, as well as a Museum and a Library.

Every Special Branch of Medicine and Surgery has a Department.

ENTRANCE SCHOLARSHIPS.

Eight Entrance Scholarships and Exhibitions are awarded annually of the aggregate **value** of **£900.** Other Scholarships and Prizes amount to about **£1,000** annually.

PRELIMINARY SCIENCES.

Chemistry, Physics, and Biology are fully taught in the **Laboratories** allotted to these subjects.

HOSPITAL APPOINTMENTS.

Eighty-five Hospital Appointments (37 resident) are available each year for Students who have passed their final qualifying examination.

Five hundred and sixty Ward Clerkships and Dresserships are open annually to Students before qualification.

STUDENTS' UNION.

The Union possesses a Club Ground of ten acres at Winchmore Hill, and athletic amenities are available on the newly-purchased site in Charterhouse Square.

HIGHER EXAMINATIONS.

Special Classes are held for **F.R.C.S.**, etc.

For further particulars apply, personally or by letter, to—

THE DEAN OF THE MEDICAL COLLEGE, St. Bartholomew's Hospital, London, E.C.1.

ST. GEORGE'S HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON).

HYDE PARK CORNER, S.W.

THE HOSPITAL and MEDICAL SCHOOL occupy the finest site in London and are readily accessible from all parts of the Metropolis.

The entire teaching in the School is devoted to the subjects of the Final Examinations; in other words, **is specially adapted to the interests of men from the Universities who have passed their Examination in Anatomy and Physiology.**

By arrangement with the authorities of King's College and University College, St. George's Students attend at those Colleges for tuition in the Preliminary and Intermediate subjects.

SEVEN ENTRANCE SCHOLARSHIPS IN ANATOMY AND PHYSIOLOGY, AND GENERAL PATHOLOGY, of the value of £120, £80 (3), £60 (2), and £40 respectively, are offered for competition in June to candidates who have passed the **2nd M.B.** or corresponding examination. In addition, **EXHIBITIONS,** each of the value of £40 and up to four in number, will be awarded to candidates of approved merit in the Entrance Scholarship Examination.

MANY VALUABLE PRIZES ARE AWARDED EACH YEAR, including the following:—Allingham Scholarship of the value of £87, Laking Memorial Prize of the value of £45, the Brackenbury Prize in Medicine, the Brackenbury prize in Surgery, and the Webb Prize in Bacteriology, each of the value of £33.

HOUSE APPOINTMENTS. Fourteen appointments are made annually so that students have an excellent chance of holding such appointments at their own Hospital.

PAID APPOINTMENTS. Resident Assistant Physician, £250; Two Surgical Chief Assistants, each at £225; Medical Registrar, £200; Assistant Curator of the Museum, £100; Resident Anaesthetist, £100; Resident Obstetric Assistant, £100.

The **ST. GEORGE'S HOSPITAL CLUB** incorporates the **RUGBY FOOTBALL, CRICKET, LAWN TENNIS, BOXING, RIFLE** and other Clubs, and possesses an **ATHLETIC GROUND** within easy reach of the Hospital, and Smoking and Luncheon Rooms on the School Premises.

Entrance Fee, £10 10s. 0d. Annual Composition Fee, which covers all courses, lectures, etc., in the Hospital and School, £42. Annual Club Subscription, £3 13s. 6d.

The Winter Session will begin on October 1st, but students can enter at any time.

Further information may be obtained from the Dean of the Medical School.

A. FEILING, M.D., F.R.C.P.,
Dean.

Westminster Hospital Medical School

(UNIVERSITY OF LONDON)

CENTENARY YEAR

SESSIONS COMMENCE 1st WEEK IN JANUARY, APRIL, OCTOBER

The Medical School, centrally situated (opposite Westminster Abbey), with Library, Museum, Lecture Theatres, Epidiascope, &c., is only a few minutes walk from the Hospital. The entire teaching of the Hospital and School is devoted to the subjects of the Final Examinations. Arrangements are made for the tuition required for Preliminary and Intermediate subjects.

SCHOLARSHIPS. The School Committee is prepared to grant a certain number of Scholarships, each of the value of £75, to men of outstanding merit, upon the nomination of the Dean of their college or the Principal of their school. Five Competitive Entrance Scholarships to the value of £375, and prizes to the value of £170 are awarded annually.

APPOINTMENTS. Paid appointments as Medical, Surgical and Obstetric Registrars, Casualty Officers, House Physicians, House Surgeons, Anaesthetist and Clinical Assistants, are available for Students when they have passed their examinations. There are excellent opportunities for research work in the recently endowed Carlill Laboratories.

FEES. Annual composition fee £42, which includes membership of the Sports Union with its various branches, football, cricket, tennis, hockey, boxing, swimming, and Guthrie Society. The Sports ground is within 20 minutes of the Hospital.

The Dean or Sub-Dean will be pleased to arrange for intending students and parents to inspect the Hospital and Medical School at any time. Only Male Students are admitted.

A Prospectus and full particulars may be obtained on application the Dean:—

ADOLPHE ABRAHAMS, O.B.E., M.A., M.D., F.R.C.P.,
Westminster Hospital Medical School, Caxton Street, Westminster, S.W.1.
Telephone: Victoria 0765.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON).

Dean: JOHN A. DRAKE, M.D.(Lond.), F.R.C.P., D.P.H.

THE NEW MEDICAL SCHOOL (opened in July, 1933), contains Lecture Rooms, Lecture Hall, Museum, Research Rooms and Laboratories, Bio-Chemical Research Laboratory, Common Rooms, and Refectory. Two Squash Rackets Courts adjoin the new buildings.

FOURTEEN ENTRANCE SCHOLARSHIPS, total value £1,530, are awarded annually.

RESIDENT HOSPITAL APPOINTMENTS, numbering thirty-one, are made during each year.

ATHLETIC GROUND. The Athletic Ground of the Medical School is within ten minutes' walk of the Hospital, and has accommodation for cricket, football, hockey, and lawn tennis.

SCHOOL HOSTEL. "The Platanes," standing in large grounds, with three lawn tennis courts, provides residence for 80 students, and is within five minutes' walk of the Hospital.

DENTAL SCHOOL. The Dental School was opened in October, 1923. A full Course is given in co-operation with King's College, in preparation for Dental Degrees and Diplomas.

For Particulars, Calendar of the School, and Appointments to see the School and Hospital, application should be made to the Secretary, S. C. RANNER, M.A.Cantab., King's College Hospital Medical School, Denmark Hill, London, S.E.5.

LONDON SCHOOL of HYGIENE & TROPICAL MEDICINE

(University of London).

Incorporating the Ross Institute.

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE (Eng.)

THE COURSE OF STUDY IS DIVIDED INTO TWO PARTS: Section A (Clinical and Laboratory Instruction) and Section B (Tropical Hygiene), which can be taken independently but not concurrently; Section A is a three months' course and Section B a two months' course. This Course of Study is recognised by the University of London as a Course for Associate Students.

DATES OF THE COURSES, 1934-5.

SECTION A (CLINICAL AND LABORATORY INSTRUCTION).

1st COURSE: *1st October*—*21st December*, 1934: 2nd COURSE: *7th January*—*30th March*, 1935.
3rd COURSE: *8th April*—*28th June*, 1935.

SECTION B (TROPICAL HYGIENE).

1st COURSE: *21st January*—*22nd March*, 1935. 2nd COURSE: *23rd April*—*21st June*, 1935.

FEES (inclusive): Section A, £25; Section B, £15.

DIPLOMA IN PUBLIC HEALTH

The 1934–5 Course of Study, which qualifies students to sit for the UNIVERSITY OF LONDON DIPLOMA, covers a period of nine calendar months' whole-time work.

THE COURSE WILL COMMENCE ON OCTOBER 1ST, 1934.

Inclusive FEE, 54 guineas, to cover lectures, demonstrations, the necessary practical work in public health departments, and instruction in infectious diseases, etc.

DIPLOMA IN BACTERIOLOGY

The Course of Study for the academic year 1934–5, qualifying for the UNIVERSITY OF LONDON DIPLOMA, commences on October 9th, 1934. Inclusive FEE, £47 15s.

EPIDEMIOLOGY AND VITAL STATISTICS

Special Three-monthly Advanced Courses. Composition FEE, 7 guineas.

DIPLOMA IN PSYCHOLOGY (Industrial)

Special courses of study for the University of London Diploma by arrangement.

For Prospectuses, Synopses of Lectures, etc., apply to the SECRETARY, LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, KEPPEL STREET, (Gower Street), LONDON, W.C.1. (Museum 3041).

UNIVERSITY COLLEGE HOSPITAL DENTAL SCHOOL.

NATIONAL DENTAL HOSPITAL, GREAT PORTLAND ST., W.1.

LECTURERS.

Dental Surgery and Pathology.—J. L. DUDLEY BUXTON, L.M.S.S.A., L.D.S.Eng.
Mondays and Wednesdays at 5 p.m. October to March.

Special Anatomy.—ALAN SHEFFORD, O.B.E., L.D.S.
Tuesdays at 5 p.m.

Orthodontics.—A. C. McLEOD, D.D.S., B.Sc.(Dent.), L.D.S. Tuesdays at 5 p.m. May to July.

Dental Mechanics.—B. MENDLESON, L.D.S.Eng.
Wednesdays at 5 p.m. January to March.

Dental Materia Medica.—H. DAVIS, B.Sc., A.I.C., Ph.C.
Tuesdays and Fridays at 2 p.m. May to July.

Bacteriology of the Mouth.—Sir KENNETH GOADBY, K.B.E., D.P.H., L.R.C.P., M.R.C.S., L.D.S.Eng.
Wednesdays at 2 p.m. January to March.

General Pathology.—Prof. A. E. BOYCOTT, M.A., D.M., F.R.C.P., F.R.S.
Mondays, Wednesdays, Thursdays, and Fridays at 12 noon. May.

Bacteriology.—J. A. BOYCOTT, B.M., Ch.B.
Tuesdays at 2 p.m. January to July.

Dental Histology.—A. K. INCE-JONES, L.R.C.P., M.R.C.S., L.D.S.Eng.
Saturdays at 9.30 a.m. January to March.

Dental Metallurgy.—H. TERREY, B.Sc.
Tuesdays at 5 p.m. at University College. October to December.

Anaesthetics.—R. R. MACINTOSH, F.R.C.S.Ed.
Tuesdays at 5 p.m. October to December.

Radiology.—D. A. IMRIE, M.D.Laus., L.R.C.P.E., L.R.C.S.E., D.M.R.E., L.D.S.
Wednesdays at 5 p.m. July.

Special Medicine Lectures.—K. E. HARRIS, M.D., F.R.C.P.
Thursdays at 5 p.m. January to July.

Surgery Lectures.—Prof. C. C. CHOYCE, C.M.G., C.B.E., B.S., F.R.C.S.
Mondays at 9 a.m.; October to December. Mondays at 4.15 p.m.; January to March.

Special Surgery Lectures.—A. J. GARDHAM, M.S., F.R.C.S. Wednesdays at 12 noon. January to July.

The WINTER SESSION Commences MONDAY, OCTOBER 1st, 1934.

This Hospital and School, situated in the centre of a large population, and within a few minutes of University College Hospital, has recently been reorganised and equipped on the highest standard of modern requirements, and is admirably adapted for the teaching of students in every branch of the Science and Art of Dental Surgery. The mechanical laboratory, conservation room, and X-rays departments are replete with all the latest approved appliances.

Students (men and women) enter as students of University College Hospital, and attend classes in anatomy and physiology at University College, adjacent to University College Hospital.

Each student serves as a dresser in the extraction, anaesthetic, conservation, and X-rays departments, which provides him with the opportunity of observing and actually carrying out the methods of work in all branches.

Four House Surgeons are appointed half yearly.

The Calendar, containing full information as to lectures, fees, prizes, etc., may be had on application to the Sub-Dean of Dental Students, who attends the University College Hospital Medical School, University Street, Gower Street, W.C.1, on Wednesdays, at 9.30 a.m.

UNIVERSITY COLLEGE HOSPITAL

540 Beds. **MEDICAL SCHOOL** *540 Beds.*

(UNIVERSITY OF LONDON),

UNIVERSITY STREET, GOWER STREET, W.C.1.

TELEPHONE—MUSEUM 7026 and 7027.

The WINTER SESSION will commence on Monday, October 1st, 1934.

THE SCHOOL IS FOR FINAL STUDIES only.

STUDENTS are prepared for the degrees of the Universities of: OXFORD, CAMBRIDGE, LONDON, and DURHAM, and for the Diplomas of other qualifying Bodies.

CLINICAL UNITS in MEDICINE, SURGERY, and OBSTETRIC MEDICINE are now in operation.—The whole-time Directors of the Units are concerned with the organisation of the teaching generally, but the honorary staff are responsible for the largest share of the teaching in the wards and out-patient Department of the Hospital. The new Obstetric Hospital is now finished and in full occupation.

Director of the Medical Unit—Prof. T. R. ELLIOTT. Director of the Surgical Unit—Prof. C. C. CHOYCE.
Director of the Obstetric Unit—Prof. F. J. BROWNE.

FEES.—Inclusive fee to cover complete Clinical Course: £45 per annum for three years. Oxford and Cambridge Students who have completed their course in Pathology: £40 per annum for three years. There are no extras, as these fees include: (i) Courses of Instruction in Pharmacy, Vaccination, and Fevers; (ii) Life Subscription to the Medical Society or Women's Medical Club.

APPOINTMENTS.—Forty-seven appointments are open during the year to students, in addition, salaried appointments to the annual value of over £2,000.

SCHOLARSHIPS, EXHIBITIONS, and PRIZES of the value of over £1,000 are awarded annually. Amongst the most important are:

I. GOLDSMID ENTRANCE SCHOLARSHIPS entitling the holder to the Final Course of Medical Study, are offered for competition annually in July, and are open to students who are preparing for the Degrees of the Universities of London, Oxford, Cambridge, Durham, or other British Universities, or for the Diplomas of the Royal Colleges of Physicians and Surgeons, or for the Licence of the Society of Apothecaries.

II. GOLDSMID ENTRANCE EXHIBITION (VALUE £80), entitling the holder to a reduction by £80 of the fees due for the Full Course of Final Medical Study.

III. FILLITER ENTRANCE SCHOLARSHIP IN PATHOLOGY (value £52 10s.) entitling the holder to a reduction by £52 10s. of the fees due for the Full Course of Final Medical Study.

FERRIERE SCHOLARSHIP, value £25 awarded annually in April or October.

GRAHAM SCHOLARSHIP in Pathology, £300 per annum.

LESLIE PEARCE GOULD SCHOLARSHIP, awarded every two years, about £260.

RADCLIFFE CROCKER TRAVELLING SCHOLARSHIP in Dermatology, awarded every five years, about £280.

MAGRATH SCHOLARSHIP in Clinical Medicine, about £150.

PERCIVAL ALLEYN PRIZE, about £110.

ATCHISON SCHOLARSHIP, about £55 per annum; tenable for two years.

ATKINSON MORLEY SCHOLARSHIP, £45 per annum; tenable for three years.

BUCKNILL SCHOLARSHIP entitles the holder to the Intermediate Medical Course at University College, and for the Final Course at the Medical School.

Further information and Prospectus can be obtained from the Secretary, and the Dean can be interviewed at any time by appointment.

Dean—A. M. H. GRAY, C.B.E., M.D., F.R.C.P., F.R.C.S. *Vice-Dean*—GWYNNE WILLIAMS, M.S., F.R.C.S.
Sub-Dean for Dental Students—J. L. DUDLEY BUXTON, L.M.S.S.A., L.D.S. *Secretary*—R. SLOLEY.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL

(The University of London) Albert Embankment, S.E.

The finest situation in London.

The WINTER SESSION begins on MONDAY, OCTOBER 1st, 1934.

FULL CURRICULUM. Newly equipped Laboratories for Preliminary and Intermediate Subjects which are taught by Professors and Teachers recognized by the University of London. For Clinical work the fullest facilities are provided, including a special Maternity Ward.

UNIVERSITY MEN can join the School for any part of their M.B. Course, and for Clinical work can join in January, April, July, or October.

CLASSES for the **PRIMARY** and **FINAL F.R.C.S.** are held before each Examination.

A RESIDENTIAL HOSTEL and Students Club, with all amenities, is attached to the Hospital.

ENTRANCE SCHOLARSHIPS in **SCIENCE** and special **UNIVERSITY SCHOLARSHIPS** are awarded by Examination in July of every year.

PROSPECTUS and full particulars may be obtained from the Secretary, The Medical School, St. Thomas's Hospital, London, S.E.1.

UNIVERSITY OF BRISTOL

FACULTY OF MEDICINE.

The WINTER SESSION commences on 2nd October, 1934.

The University grants the Degrees of Bachelor of Medicine and Surgery (M.B., Ch.B.), Master of Surgery (Ch.M.), Doctor of Medicine (M.D.), Bachelor of Dental Surgery (B.D.S.), and Master of Dental Surgery (M.D.S.), as well as diplomas in Public Health (D.P.H.), and Dental Surgery (L.D.S.), and provides a Training Course for Health Visitors.

The lectures and laboratory courses which are given in the University, although primarily designed for the degrees and diplomas of the University, are equally adapted to those of other Universities and Examining Boards, and Students preparing for such external degrees and diplomas have equal attention paid to them.

Hospital Practice and Clinical Instruction are provided in the Hospitals and Asylum of the City, associated with the University for this purpose, and Students have exceptional opportunities of studying the practice of medicine from a large variety of cases.

Women are admitted to all Classes, Lectures, and Laboratory Practice, and attend them with men. The Halls of Residence for Men and for Women Students are situated in Clifton, near the University.

INCLUSIVE FEES—

For the M.B., Ch.B., curriculum ...	205	guineas
For the B.D.S. curriculum, including Mechanical Laboratory	215	,,
Do. excluding Mechanical Laboratory	155	,,
For the L.D.S. curriculum, including Mechanical Laboratory	200	,,
Do. excluding Mechanical Laboratory	140	,,
For Mechanical Laboratory alone ...	60	,,

For additional particulars apply to Professor R. J. BROCKLEHURST, M.A., D.M., B.Ch., Dean.

UNIVERSITY OF BIRMINGHAM.

FACULTY OF MEDICINE.

(Associated with the General, Queen's and Special Hospitals for Clinical Teaching.)

The next Session opens on October 1st, 1934.

The University grants degrees in Medicine, Surgery, and Public Health, and a Diploma in Public Health; also Degrees and a Diploma in Dental Surgery.

The Courses of Instruction are also adapted to meet the requirements of other Universities and Licensing Bodies.

HOSPITAL APPOINTMENTS.

A large number of Resident Hospital appointments in Birmingham and District are open to qualified students of the School.

SCHOLARSHIPS, EXHIBITIONS, AND PRIZES.

Entrance and other Scholarships and Exhibitions and various Prizes and Medals are awarded annually in the Faculty of Medicine, full details of which are in the Faculty syllabus.

SCHOOL OF DENTISTRY.

(University of Birmingham and Birmingham Dental Hospital.)

The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diplomas and Dental Degrees of the University and all other Licensing Bodies. A Dental Scholarship of the value of £46 17s. 6d., tenable for one year, is offered annually.

PRE-REGISTRATION MEDICAL AND DENTAL EXAMINATIONS.

The necessary courses of Instruction in Chemistry and Physics and in Biology may be attended in the University.

For syllabus and further information apply to the Registrar.

STANLEY BARNES, M.D., D.Sc., F.R.C.P., Dean.

UNIVERSITY OF OXFORD.

DIPLOMA IN OPHTHALMOLOGY.

The next Examination begins on June 24th, 1935. The two months' Course of Instruction starts on April 29th, 1935. For further information apply to—

P. H. ADAMS, Margaret Ogilvie Reader in Ophthalmology.

6, Holywell, Oxford.

THE KIRK DUNCANSON FELLOWSHIP FOR MEDICAL RESEARCH.

The Council of the Royal College of Physicians of Edinburgh will shortly award two Fellowships:

1. A WHOLE-TIME Fellowship of £300 per annum will be awarded for research. Preference will be given to a candidate who furnishes evidence of his experience of or ability for research. A candidate is requested to submit a scheme of his proposed work. If appointed he will be called upon to give a report of his work at the end of the year, when, at the discretion of the Council, the Fellowship may be continued for a further period of one or even two years. The Fellow shall not, without the consent of the Council, hold any other Fellowship, Scholarship, or Exhibition, or hold any paid appointment or undertake any remunerative work.

2. A PART-TIME Fellowship of £100 a year, which may be continued for two or three years, will be awarded to a candidate who in the opinion of the Council is deserving of the Fellowship and who furnishes evidence of his ability for research.

Applications must be sent to the Secretary of the Royal College of Physicians, 9, Queen Street, Edinburgh, not later than Sept. 15th.

SCHOOLS for BOYS and GIRLS

TUTORS FOR ALL EXAMS.

Messrs. J. & J. PATON having an up-to-date Knowledge of the BEST SCHOOLS and TUTORS in this Country and on the Continent, will be pleased to AID PARENTS in their choice by sending (free of charge) prospectuses and TRUSTWORTHY INFORMATION and ADVICE.

The age of the pupil, district preferred, and rough idea of fees should be given.

J. & J. PATON, Educational Agents, 143, Cannon St., London, E.C.4. Tel.: Mansion House 5053.

F.R.C.S.(Edin.).

PREP. COURSE for next Exam. will commence shortly. Course includes Museum (Surg., Path.), and Anatomical (Dissection) Specimens. Postal Tuition at any time.—Further partics., H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinb'gh.

THE MILROY LECTURES ON STATE MEDICINE AND PUBLIC HEALTH.

The Council of the Royal College of Physicians are prepared to receive applications for the office of MILROY LECTURER for 1936.

Applications must be addressed to the Registrar, Royal College of Physicians, Pall Mall East, on or before September 22nd, 1934, and should contain a concise précis of the subject selected by the candidate.

The Course consists of Two Lectures.

The Lectures are to be given on a Tuesday and Thursday in February or March, 1936.

A copy of Dr. MILROY'S "Suggestions" on the subject of his bequest, and information as to the emolument, may be obtained from the Registrar.

August, 1934.

THE LONDON SCHOOL OF DERMATOLOGY.

St. John's Hospital for Diseases of the Skin,

49, Leicester Square, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday at 5 p.m., from October to March, and four times weekly during May. General Practitioners desiring to attend any particular lecture or lectures can do so without paying a fee. Clinics daily at 2 p.m. and 6 p.m.; Saturdays 2 p.m. only. Pathological Laboratory for Instruction or Research Work.

For further particulars, fees, etc., apply to J. E. M. WIGLEY, M.B., Dean.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st, 1934, and January 3rd, 1935, and for the Diploma in Tropical Hygiene on January 10th and April 25th, 1935. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Laboratory Secretary, School of Tropical Medicine, Pembroke Place, Liverpool, 3.

Charing Cross Hospital Medical School

(University of London)

CENTENARY YEAR

Sessions commence October and April.

SITUATED in the very centre of London, the School is the most easily accessible of all the Schools of the University.

COMPLETE FACILITIES are available for instruction in all the subjects of the medical curriculum, with special departments for every branch of clinical work.

THE INSTITUTE OF PATHOLOGY, with the abundance and variety of its material and fully equipped laboratories, offers exceptional advantages for Student, Post-Graduate, and Research work.

THE PATHOLOGICAL MUSEUM contains, as well as sections devoted to general Pathology, the famous Lockyer Collection of Obstetric and Gynaecological specimens, described by the University Inspectors as the finest in the country.

THE STUDENTS' UNION includes Common Rooms and Restaurant on the School premises and a Sports Ground of 8 acres within half an hour's journey of the School.

The large number of *RESIDENT APPOINTMENTS* in proportion to the number of students makes it probable that all students of average ability will be able to secure election to the House Staff. In addition the following paid annual appointments are open to students after qualification: Resident Medical Officer, Resident Casualty Officer, and 5 Registrarships.

SCHOLARSHIPS.—The following are awarded annually. Three "University" Scholarships, each of the value of £120. One "Open" Scholarship of the value of £75, and two "Entrance" Scholarships of £50 each. In addition numerous Exhibitions and Prizes are awarded each year.

Men Students only are admitted.

Fees 38 Guineas per annum.

For Prospectus and full information apply personally or by letter to the Dean:—

ERIC A. CROOK, M.A., M.Ch., F.R.C.S.,
Charing Cross Hospital Medical School, London, W.C.2.

Telephone Nos.: Temple Bar 3903 & 3904.

UNIVERSITY OF LONDON

OPHTHALMIC HOSPITAL MEDICAL SCHOOL

ROYAL LONDON OPHTHALMIC HOSPITAL

(Moorfields Eye Hospital), CITY ROAD, E.C.1.

Qualified Medical Practitioners and Registered Medical Students may enter on the Practice of the Royal London Ophthalmic Hospital (Moorfields) at any time, and are, on certain conditions, eligible for appointment as Chief Clinical Assistant, Clinical Assistant and Junior Assistant.

Courses of Instruction, extending over a period of five months, begin in OCTOBER and MARCH.

1. Practical Refraction Classes.
2. Methods of examination and use of the ophthalmoscope.
3. Lectures every afternoon on the following subjects: (*a*) Anatomy, including Embryology and Normal Histology; (*b*) Physiology; (*c*) Optics, including Physiological Optics; (*d*) Pathology and Bacteriology; (*e*) Ophthalmic Medicine and Surgery, consisting of: Medical Ophthalmology, External Diseases of the Eye, Motor Anomalies and Squint, Diseases of the Retina and Optic Nerve, Diseases of the Uveal Tract.
4. Ophthalmoscopic Conditions: a practical class with demonstrations each week at 5 p.m.
5. Occasional Lectures on subjects allied to Ophthalmology.
6. Operative Surgery. In these classes the usual operations are performed by the student upon pigs' eyes.
7. Practical Pathology. A course of demonstrations on the normal and morbid histology of the eye is given by the pathologist in the laboratory.
8. Practical Bacteriology.
9. Classes in Radiography.
10. Physico-therapy (Ultra-violet Light, Diathermy, etc.).
11. Slit-lamp Microscopy.

FEES.—A composition fee of 35 guineas will admit Students once to all the lectures and classes (except the classes on Physico-Therapy, and Slit-lamp Microscopy, and the examination fee).

DIPLOMA IN OPHTHALMIC MEDICINE & SURGERY & OTHER DEGREES IN OPHTHALMOLOGY.

The above complete curriculum is specially designed to meet the requirements of candidates entering for these examinations.

Fees for the Practice of the Hospital:

Perpetual	£5 5 0	Two months	£2 2 0
Three to six months	£3 3 0	One month	£1 1 0

Clinical work begins at 9 a.m. daily. Operations are performed between 10 a.m. and 1 p.m.

For further particulars apply to the Secretary to the Medical School at the Royal London Ophthalmic Hospital, City Road, E.C.1; or to the Dean, Charles Goulden, O.B.E., M.D., M.Ch., F.R.C.S.

UNIVERSITY OF DURHAM

COLLEGE OF MEDICINE,

NEWCASTLE-UPON-TYNE.

The degrees in Medicine, Surgery, Hygiene, and Dentistry, the Diploma in Public Health, the Diploma in Psychiatry, and the Licence in Dental Surgery of the University of Durham are open to men and women.

The WINTER SESSION, 1934-5, will be commenced on TUESDAY, OCTOBER 2nd.

Students can complete, at the University of Durham College of Medicine, Newcastle-upon-Tyne, the entire course of professional study required for the above degrees, diplomas, and licence; also for the Examinations of the Royal Colleges of Physicians and Surgeons and other Examining Bodies.

Hospital practice is carried out at the Royal Victoria Infirmary, a general hospital containing more than 700 beds, and there are facilities for the study of the various special subjects. General and Special Post-Graduate Courses are held.

Practical Midwifery can be studied at the Princess Mary Maternity Hospital, which contains 90 beds, with an annual indoor and outdoor attendance on 3,000 cases. Lectures are given on Psychological Medicine in the College of Medicine, and clinical instruction at the Mental Hospital, Newcastle. Clinical instruction in Infectious Diseases is given by the Medical Officer of Health in the City Hospital at Walkergate.

A Dental Department has been established, which includes a dental hospital, recently erected and equipped on the most modern lines, with abundant material for clinical teaching and facilities for training in practical dental mechanics.

Particulars may be obtained from the DEAN of the College.

BIRMINGHAM SCHOOL OF DENTISTRY.

UNIVERSITY of BIRMINGHAM and BIRMINGHAM DENTAL HOSPITAL.

DEAN OF THE FACULTY OF MEDICINE: STANLEY BARNES, M.D., D.Sc., F.R.C.P.
DEAN OF THE DENTAL HOSPITAL: C. H. HOWKINS, C.B.E., D.S.O., M.R.C.S., L.R.C.P., L.D.S.

The Session will commence on MONDAY, OCTOBER 1st, 1934.

DEGREES AND DIPLOMA IN DENTAL SURGERY.

The Degrees of Bachelor of Dental Surgery (B.D.S.) and Master of Dental Surgery (M.D.S.) and the Diploma in Dental Surgery (L.D.S.) are open to students who follow the requisite courses in the University.

SCHOOL OF DENTISTRY.

The School of Dentistry, in conjunction with the General and Queen's Hospitals, affords a complete curriculum for the Dental Diplomas and Dental Degrees of the University and other Licensing Bodies.

The Dental Hospital is fully equipped for the training of Students in Mechanical, Prosthetic, and Operative Dentistry.

A DENTAL SCHOLARSHIP of the value of £46 17s. 6d., tenable for one year, is offered annually by the University.

For syllabus and further information, application should be made to the Dean of the Faculty of Medicine, the University, Edmund Street, Birmingham; or to the Dean of the Dental Hospital, Great Charles Street, Birmingham.

THE UNIVERSITY OF LIVERPOOL

FACULTY OF MEDICINE.

THE MEDICAL SCHOOL provides complete courses of instruction for the Examinations of the University of Liverpool, and also meets the requirements of other Universities and Examining Bodies in the United Kingdom.

Other Schools of the Faculty are:—The School of Dental Surgery, the School of Hygiene, the School of Tropical Medicine, and the School of Veterinary Science.

DEGREES AND DIPLOMAS IN THE FACULTY OF MEDICINE.

Bachelor of Medicine & Bachelor of Surgery	M.B., Ch.B.	Doctor of Veterinary Science	D.V.Sc.
Doctor of Medicine	M.D.	Doctorate in Philosophy	Ph.D.
Master of Surgery	Ch.M.	Licence in Dental Surgery	L.D.S.
Master of Orthopaedic Surgery	M.Ch.Orth.	Diploma in Public Health	D.P.H.
Bachelor of Dental Surgery	B.D.S.	Diploma in Tropical Medicine	D.T.M.
Master of Dental Surgery	M.D.S.	Diploma in Tropical Hygiene	D.T.H.
Bachelor of Veterinary Science	B.V.Sc.	Diploma in Veterinary Hygiene	D.V.H.
Master of Veterinary Science	M.V.Sc.	Diploma in Medical Radiology & Electrology	D.M.R.E.

Valuable Fellowships, Scholarships, and Prizes are offered for competition each year.

THE CLINICAL SCHOOL.

THE CLINICAL SCHOOL consists of FOUR GENERAL HOSPITALS: The Royal Infirmary, the Royal Southern Hospital, the David Lewis Northern Hospital, and the Stanley Hospital; and of FIVE SPECIAL HOSPITALS: The Eye, Ear and Throat Infirmary, the Women's Hospital, Liverpool, the Royal Liverpool Children's Hospital, the Liverpool Maternity Hospital, and the St. Paul's Eye Hospital.

These Hospitals contain in all about 1,500 Beds.

The organization of these Hospitals to form one teaching Institution provides the Medical Student and Medical Practitioner with an extensive field for clinical education and study.

Twenty-one house physicians and house surgeons are appointed every six months in the General Hospitals, and the majority of these receive salaries ranging from £60 to £100 per annum. Five resident medical officers are also appointed at intervals to the Special Hospitals.

Infectious Diseases are studied in the Local and District Hospitals, and Mental Diseases at the County Mental Hospital, Rainhill.

For information on all matters concerning the curriculum, application should be made to the Dean of the Faculty of Medicine, the University of Liverpool.

W. H. WOOD, Dean.

UNIVERSITY OF MANCHESTER

FACULTY OF MEDICINE.

The WINTER SESSION Commences on OCTOBER 4th.

The Laboratories and Museums afford every facility to Students and Graduates for Practical Instruction, as well as for Original Research.

SCOPE OF INSTRUCTION.

Complete Courses of Instruction are offered for the Examinations of the University of Manchester, and also for the Examinations of other Examining Bodies in the United Kingdom. Post-Graduate Courses are held in preparation for the Diploma in Psychological Medicine (Manch.), and the Certificate in Venereal Diseases; Clinical Assistantships are also available at various hospitals. In the Dental Department Complete Courses are given preparing for the Degrees and Diploma in Dentistry granted by the University, as well as for the Diploma of the Royal College of Surgeons of England, and other Dental Diplomas. The Public Health Laboratories are situated at a short distance from the University. The fullest opportunities are offered to Graduates and others in preparation for the Diplomas in Bacteriology, in Pathology, in Public Health, and in Veterinary State Medicine. Particulars may be obtained from the Dean of the Medical School.

OPPORTUNITIES FOR CLINICAL STUDY.—ROYAL INFIRMARY AND OTHER HOSPITALS.

The Clinical Instruction is given in the Royal Infirmary, opened in 1909 on a site near to the Medical School. It is provided with every modern requirement for the treatment of the sick and the investigation of disease. Instruction in Special Subjects is given in other Hospitals associated with the University. A large number of beds in the General and in the Special Hospitals are available, thus affording unrivalled opportunities for Clinical Study.

1. Manchester Royal Infirmary	590 beds	7. Hospital for Diseases of the Ear	24 beds
2. The St. Mary's Hospitals for Women and Children	288 beds	8. Hospital for Diseases of the Throat and Chest	160 beds
3. Manchester Children's Hospital	190 beds	9. Hospital for Diseases of the Skin	54 beds
4. Manchester Royal Eye Hospital	160 beds	10. Christie Cancer Hospital and Holt Radium Institute	104 beds
5. Manchester Northern Hospital for Women and Children	73 beds	11. Ancoats Hospital	141 beds
6. Fever Hospital for Infectious Diseases	600 beds	12. Salford Royal Hospital	263 beds
		13. Dental Hospital of Manchester.	

HOSPITAL APPOINTMENTS.

In consequence of the large number of Hospitals associated with, or in the vicinity of, the University, exceptional opportunities are offered to Graduates to obtain Resident Hospital Appointments.

SCHOLARSHIPS, EXHIBITIONS, AND PRIZES.

Two Open Entrance Scholarships for Graduates, each of the value of 160 guineas, are offered yearly in July. In addition, the Dreschfeld Scholarship of £20 per annum, the John Russell Medical Entrance Scholarship of £45 per annum, and other Entrance Scholarships of the value of £30 to £40 a year for two or three years, are also tenable in the Medical Faculty.

Fellowships, Scholarships, etc., are also offered for competition to Students of the Faculty.

RESIDENCE FOR UNDERGRADUATES.

There are Halls of Residence both for Men and for Women Students, and lodgings can be recommended.

Prospectuses will be forwarded on application to the Registrar.

THE UNIVERSITY OF LEEDS

SCHOOL OF DENTISTRY

The First Term begins on **October 2nd, 1934.**

The degrees of B.Ch.D. and M.Ch.D., as well as a diploma, L.D.S., are conferred by the University.

The systematic Classes and Lectures are held in the School of Medicine and School of Dentistry of the University, while the clinical instruction is given in the Leeds General Infirmary and Dental School Hospital. The combined courses of study are arranged to meet the University Regulations in the first instance, but they also afford every opportunity for study to students preparing for the dental examinations of other Licensing Bodies.

Intending students can enter as pupils in the Dental School and can obtain instruction in the preliminary scientific subjects in the Department of Science of the University.

For further particulars application should be made to:—
The Warden, School of Dentistry, Leeds, 1.

THE UNIVERSITY OF LEEDS

FACULTY OF MEDICINE

SCHOOL of MEDICINE and THE GENERAL INFIRMARY at LEEDS

The First Term begins on **October 2nd, 1934.**

The degrees of M.B., Ch.B., Ch.M. and M.D. are conferred, and diplomas in Public Health and Psychological Medicine are granted by the University.

The systematic Classes and Lectures are held in the School of Medicine of the University while the Clinical instruction is given in the General Infirmary. The combined courses of study are arranged to meet the University Regulations in the first instance, but they also afford every opportunity for students preparing for the examinations of any licensing body.

The instruction in the subjects for the First Examination is given in the Department of Science of the University.

The Composition Fee for the Academic Courses and Clinical instruction is £242.

For further particulars application should be made:—

Regarding instruction given at the University to
The Academic Sub-Dean,
School of Medicine,
Leeds, 2.

Regarding instruction given at the Infirmary to
The Clinical Sub-Dean,
School of Medicine,
Leeds. 2.

UNIVERSITY OF EDINBURGH.

Principal—Sir THOMAS H. HOLLAND, K.C.S.I., K.C.I.E.

The WINTER SESSION, 1934-5, opens on October 2nd and closes on March 15th.
The SUMMER SESSION, 1935, opens on April 16th and closes on June 28th.

FACULTY OF MEDICINE.

Dean—Professor SYDNEY SMITH, M.D., D.P.H.

The Faculty embraces 19 Professors and about 80 Lecturers, and attached to these there are about 40 Assistants and Demonstrators. Instruction is given in all the main branches of Medical Science, viz.:—

PROFESSORS.

Chemistry—George Barger, M.A., D.Sc., F.R.S.
Zoology—J. H. Ashworth, D.Sc., F.R.S.
Botany—Sir Wm. Wright Smith, M.A.
Anatomy—J. C. Brash, *M.C.*, M.A., B.Sc., M.D.
Physiology—Ivan de Burgh Daly, M.A., M.D.
Materia Medica—A. J. Clark, *M.C.*, M.D., F.R.S.
Pathology—A. Murray Drennan, M.D.
Bacteriology—T. J. Mackie, M.D.
Forensic Medicine—Sydney A. Smith, M.D., D.P.H.
Public Health—P. S. Lelean, C.B., C.M.G., F.R.C.S.
Medicine—W. T. Ritchie, M.D.
Surgery—D. P. D. Wilkie, M.D., Ch.M.
Midwifery and Gynaecology—R. W. Johnstone, O.B.E., M.A., M.D.
Clinical Surgery—John Fraser, Ch.M., M.D.
Clinical Medicine—Edwin Bramwell, M.D., W. T. Ritchie, M.D., and D. Murray Lyon, M.D.
Tuberculosis—Sir Robert W. Philip, M.A., M.D., LL.D.
Therapeutics—D. Murray Lyon, M.D., D.Sc.
Psychiatry—D. K. Henderson, M.D.
Child Life and Health—Charles McNeil, M.A., M.D.

LECTURERS.

Anatomy—E. B. Jamieson, M.D.; F. E. Jardine, M.B.; W. Q. Wood, Ch.M.
Applied Anatomy—F. E. Jardine, M.B.
Human Physiology—J. McMichael, M.D.
Biochemistry—Philip Eggleton, M.Sc., D.Sc.
Biophysics—W. A. Bain, B.Sc., Ph.D.
Physiology of the Nervous System—A. Ninian Bruce, M.D., D.Sc.
Materia Medica—C. M. Scott, M.B.
Pathology—W. G. Millar, M.B., J. Davidson, M.B.
Morbid Anatomy—J. Davidson, M.B.
Pathology of Children—Agnes MacGregor, M.B.
Bacteriology—H. J. Gibson, M.B., A. Haddow, M.B., May Christison, Ph.D.
Physics—G. A. Carse, M.A., D.Sc., J. Paton, M.A., B.Sc.
Botany—J. L. S. Smith, M.A., B.Sc., R. J. D. Graham, D.Sc., A. Nelson, B.Sc., Ph.D.
Chemistry—Edgar Stedman, B.Sc., Ph.D., C. P. Stewart, M.Sc., Ph.D., Ellen Stedman, M.Sc.
Zoology—C. H. O'Donoghue, D.Sc., A. L. Craig-Bennett, M.A., Ph.D., R. A. R. Gresson, Ph.D., P. Gray, Ph.D., G. F. Friend, B.A., B.Sc.
Tropical Diseases—Lt.-Col. E. D. W. Greig, C.I.E., M.D.
Entomology and Parasitology—J. H. Ashworth, D.Sc., F.R.S., A. E. Cameron, M.A., D.Sc.
Public Health—J. du P. Langrishe, D.S.O., M.B., B.Ch., John Guy, M.D.
Medicine—J. G. McCrie, M.B.
Surgery—J. J. M. Shaw, M.A., M.D.
Infectious Diseases—W. T. Benson, M.D.
History of Medicine—J. D. Comrie, M.A., B.Sc., M.D.
Surgical Pathology—K. Paterson Brown, M.B.
Neuropathology—J. H. Biggart, M.B.
Neurological Surgery—N. M. Dott, M.B.
Clinical Neurology—Professor Edwin Bramwell, M.D.
Venereal Diseases—
Psychology—Professor J. Drever, M.A., B.Sc., D.Phil.
Radiology—J. Duncan White, M.B., D.M.R.E.
Psychiatry—T. R. C. Spence, M.D., R. D. Clarkson, B.Sc., M.D., R. G. McInnes, M.B., J. R. Bailey, M.B., A. Ninian Bruce, D.Sc., M.D.
Therapeutics—A. R. Gilchrist, M.B.
Orthopaedics—W. A. Cochrane, M.B.
Clinical Midwifery—R. W. Johnstone, M.D., James Young, M.D., Douglas Miller, M.D., W. F. T. Haultain, M.B., E. C. Fahmy, M.B., John Sturrock, M.B., Clifford Kennedy, M.B., E. M. Robertson, M.B.
Child Life and Health—N. S. Carmichael, M.B., Ch.B., L. H. F. Thatcher, M.D., Gertrude Herzfeld, M.B., Norman Dott, M.B., J. M. Murray, M.B., H. L. Wallace, M.B., D. N. Nicholson, M.B., T. Y. Finlay, M.D.
Clinical Surgery—C. E. W. Illingworth, M.D., B. M. Dick, M.B., D. Band, M.B.
Clinical Medicine—J. G. McCrie, M.B.
Obstetrics and Gynaecology—R. T. Thin, M.B.

CLINICAL TEACHING STAFF, ROYAL INFIRMARY.

Clinical Surgery—Geo. L. Chiene, M.B., W. J. Stuart, M.B., J. W. Struthers, M.B., D. P. D. Wilkie, M.D., Ch.M., Henry Wade, M.D., John Fraser, M.D., Ch.M., J. M. Graham, Ch.M., A. Pirie Watson, Ch.M., F. E. Jardine, M.B., W. Q. Wood, M.D., Ch.M., J. J. M. Shaw, M.D., Walter Mercer, M.B., K. Paterson Brown, M.B., R. Leslie Stewart, M.B., T. McW. Millar, M.B., D. S. Middleton, M.B.

Clinical Medicine—D. Chalmers Watson, M.D., Edwin Bramwell, M.D., Edwin Matthew, M.D., W. T. Ritchie, M.D., John Eason, M.D., D. Murray Lyon, M.D., J. D. Comrie, M.D., Alex. Goodall, M.D., G. D. Mathewson, M.B., A. Fergus Hewat, M.D., W. D. D. Small, M.D., W. A. Alexander, M.B., T. R. R. Todd, M.D., A. R. Gilchrist, M.B., J. K. Slater, M.B., J. D. S. Cameron, M.D.

Clinical Gynaecology—R. W. Johnstone, M.D., James Young, M.D., W. F. T. Haultain, M.B., Douglas Miller, M.D., E. C. Fahmy, M.B., John Sturrock, M.B.

Diseases of the Larynx, Ear, and Nose—John S. Fraser, M.B., J. D. Lithgow, M.B., G. Ewart Martin, M.B., I. S. Hall, M.B.

Diseases of the Skin—Robert Aitken, M.D., G. H. Percival, M.B., Ph.D.

Diseases of the Eye—H. M. Traquair, M.D., E. H. Cameron, M.B., C. W. Graham, M.B., J. R. Paterson, M.B.

Practical Instruction is afforded, under the superintendence of the Professors, in Laboratories with the necessary appliances, and in Tutorial and Practical Classes connected with the above Chairs, and opportunities are afforded to Students to extend their practical knowledge and engage in original research.

Opportunities for Hospital Practice are afforded at the Royal Infirmary, the Royal Hospital for Sick Children, Royal Maternity Hospital, the City Fever Hospital, Edinburgh Municipal Hospitals, and the Royal Edinburgh Hospital for Mental Disorders. Upwards of 3,800 beds are available for the Clinical Instruction of Students of the University.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh, viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

The Class Fees for M.B. and Ch.B., including Hospital Fee (£12), amount to about £215, and the Matriculation and Examination Fees to £47 15s. 6d. An additional Fee of £21 is payable by those who proceed to M.D., and £21 by those who proceed to Ch.M.

POST-GRADUATE INSTRUCTION.—Courses of instruction are given for the University Diplomas in Public Health, Tropical Medicine and Hygiene, Psychiatry, and Radiology. These Diplomas are open to approved registered practitioners as well as to graduates in Medicine and Surgery of the University. Courses of instruction for the Diploma in Tropical Veterinary Medicine are also given. This Diploma is open to those holding an approved Veterinary qualification registrable by the Royal College of Veterinary Surgeons. The University also takes part in the Courses given under the auspices of the Edinburgh Post-Graduate Courses in Medicine. In the departments of the Faculty of Medicine, provision is made for research by students of graduate standing. In the University laboratories facilities will be provided for candidates for the Degree of Ph.D. whose applications to engage in research have been accepted by the Senatus.

A Syllabus and further information as to Matriculation, the Curricula of Study for Degrees, etc., may be obtained from the Dean of the Faculty of Medicine; and for Degrees in the Faculties of Arts, Science, Divinity, Law, and Music, from the Deans of these Faculties, or from the Secretary; and full details are given in the University Calendar, published by James Thin, 55, South Bridge, Edinburgh. Price, by post, 5/9.

June, 1934. By authority of the Senatus, W. A. FLEMING, Secretary.

THE UNIVERSITY OF SHEFFIELD.

Vice-Chancellor: A. W. PICKARD-CAMBRIDGE, M.A., D.Litt., F.B.A.

FACULTY OF MEDICINE.

Dean: Professor G. A. CLARK, M.D.

The University grants Degrees in Medicine (M.B., Ch.B., M.D., Ch.M.), and in Dental Surgery (B.D.S., M.D.S.). It also grants a Diploma in Dental Surgery (L.D.S.). These are all open to men and women on equal terms.

The session 1934-1935 begins on October 3rd.

Lectures and laboratory courses are given in the University, whilst clinical instruction is provided in the general and special Hospitals in the City.

Although the teaching is primarily directed towards the requirements of the University the instruction amply covers those of other examining bodies.

A number of resident hospital appointments are open to qualified students of the school.

Halls of Residence.—There are Halls of Residence for students.

Scholarships.—A number of Entrance Scholarships are open to students wishing to enter the Faculty of Medicine. There are also post-graduate scholarships.

A prospectus containing all necessary details of the School, and one giving particulars of scholarships, may be obtained free from—

W. M. GIBBONS, Registrar.

SCHOOL OF MEDICINE
OF
THE ROYAL COLLEGES, EDINBURGH.
(Founded 1505)

WINTER SESSION, 1934-5. **Opens 2nd October.**

The Lectures qualify for the English and Scottish Universities and other Medical Examining Boards.

One-half of the Qualifying Classes required for graduation in the University of Edinburgh may be attended in this School.

Early application to the Dean for admission to the School is essential, by March 15th for Summer and by July 31st for Winter Session.

The Calendar of the School, giving all necessary information regarding Classes, Fees, and Examinations, will be ready September 5th; a copy may be obtained (price 9d., post free) on application to the DEAN OF THE SCHOOL, Surgeons' Hall, Edinburgh.

UNIVERSITY OF ST. ANDREWS
(SCOTLAND)

Chancellor: The Rt. Hon. STANLEY BALDWIN, M.P., P.C., LL.D.
Rector: General The Right Hon. JAN CHRISTIAAN SMUTS, P.C., C.H., F.R.S., K.C.
Vice-Chancellor and Principal: Sir JAMES COLQUHOUN IRVINE, C.B.E., D.Sc., Sc.D., LL.D., D.C.L., F.R.S.

FACULTY OF MEDICINE.
Dean: FRANCIS JAMES CHARTERIS, M.D.

The University confers the following DEGREES AND DIPLOMAS: M.B., Ch.B., M.D., Ch.M., Ph.D., D.P.H., L.D.S., D.P.D. (all open to men or women).

SESSION 1934-5 opens October 2nd, 1934. The whole curriculum may be taken at Dundee, or the first two years may be taken in St. Andrews, the remaining three in Dundee.

CLINICAL INSTRUCTION at Dundee Royal Infirmary, Dundee Dental Hospital, and other Medical and Surgical Institutions in Dundee.

BURSARY (Scholarship) Competitions. June annually. Entries due May 6th.

BURSARIES FOR MEDICAL STUDENTS.—At St. Andrews: Taylour Thomson (for women), 1 of £40 and 1 of £30 for 5 years; Malcolm (for men and women), £40 for 5 years, vacant annually. At Dundee: Hepburn (for men or women), £25 for one year, vacant annually.

BURSARIES FOR WHICH MEDICAL STUDENTS ARE ELIGIBLE.—At St. Andrews: About 14 Bursaries ranging in value from £50 to £20, tenable for 3 or 4 years, vacant annually. At Dundee: About 8 Bursaries from £50 to £40, for 4 years.

RESIDENTIAL ENTRANCE SCHOLARSHIPS FOR MEN.—At St. Andrews: Five or six of £100 competed for annually in June. Medical students are eligible.

FEES for complete M.B., Ch.B. Course, exclusive of Examination Fees, Hospital Fees, etc., £182.

PRELIMINARY EXAMINATION.—September and March. Entries due August 7th and February 6th.

RESIDENTIAL HALLS for Men and Women at St. Andrews; for Women at Dundee.

Provision made for POST-GRADUATE STUDY AND RESEARCH.

Full information may be got from the Secretary of the University, 71, North Street, St. Andrews, or the Dean of the Faculty of Medicine, Westlands, St. Andrews.

ROYAL (DICK) VETERINARY COLLEGE, EDINBURGH.

PRINCIPAL: O. CHARNOCK BRADLEY, M.D., D.Sc., M.R.C.V.S.

112th SESSION commences on OCTOBER 2nd.

COURSES OF INSTRUCTION QUALIFY FOR M.R.C.V.S. and B.Sc.Edin.

COLLEGE CALENDAR, WITH FULL PARTICULARS OF EXAMINATIONS, BURSARIES, etc., may be obtained from—
A. C. DOULL, C.A., Secretary.

(Incorporated 1505.)

Royal College of Surgeons of Edinburgh.

COPIES OF REGULATIONS for the FELLOWSHIP, LICENCE, HIGHER DENTAL DIPLOMA, and LICENCE in DENTAL SURGERY, containing dates of Examinations, may be had on application to— DAVID THOMSON,
Surgeons Hall, Clerk of the College.
18, Nicolson Street, Edinburgh.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

The EXAMINATIONS for the LICENCE of the College (as a single qualification) for the ensuing year will be held on the *First Wednesday* and the following days of every month (except September and October).

Candidates for the LICENCE (as a single qualification) must send their names to the Secretary one week before the date of the Examination at which they propose to appear.

The EXAMINATIONS for the MEMBERSHIP of the College are held on the *Second Tuesday* and the following days of *January, April, July,* and *October.*

Candidates for the MEMBERSHIP must submit their applications and testimonials to the Secretary one month before the date at which they wish to appear for Examination.

For the Regulations in regard to the various qualifications granted by the College, and all other information, application may be made to the Secretary.

ROYAL COLLEGE of PHYSICIANS of EDINBURGH
ROYAL COLLEGE of SURGEONS of EDINBURGH
ROYAL FACULTY of PHYSICIANS and SURGEONS of GLASGOW.

COPIES OF REGULATIONS for the TRIPLE QUALIFICATION (L.R.C.P.E., L.R.C.S.E., and L.R.F.P. & S.G.), and the DIPLOMA IN PUBLIC HEALTH, containing Dates of Professional Examinations for the year 1934-35, Curriculum, etc., may be had on application to the REGISTRAR, Surgeons Hall, 18, Nicolson Street, Edinburgh, or to the REGISTRAR, 242, St. Vincent St., Glasgow.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1

UNIVERSITY COLLEGE, DUBLIN,
MEDICAL SCHOOL.

SESSION 1934-35.

WINTER SESSION—Lectures commence on October 9th; Introductory Course on October 2nd.

PROFESSORS AND LECTURERS.

Anatomy.
Professor—EDWARD PATRICK McLOUGHLIN, B.A., M.D., B.Ch., B.A.O.

Physiology.
Professor—JAMES M. O'CONNOR, B.A., M.D.

Zoology.
Professor—J. BAYLEY BUTLER, M.A., M.B., B.Ch., B.A.O.

Botany.
Professor—JOSEPH DOYLE, B.A., D.Sc.

Chemistry.
Professor—THOMAS J. NOLAN, B.A., D.Sc., F.I.C.
Lecturers—JOSEPH ALGAR, B.A., D.Sc., JOHN KEANE, M.Sc., Ph.D.

Physics.
Professor—JOHN J. NOLAN, M.A., D.Sc.
Lecturers—JOHN J. DOWLING, M.A., F.INST.P., PATRICK J. NOLAN, D.Sc.

Pathology and Bacteriology.
Professor—THOMAS T. O'FARRELL, F.R.C.S.I., D.P.H., M.D.

Public Health and Bacteriology.
Professor—WILLIAM D. O'KELLY, B.A., M.D., D.P.H.

Medicine.
Professor of Medicine—HENRY F. MOORE, M.D., D.Sc.
Professor of Systemic Medicine—JAMES N. MEENAN, M.D., B.Ch., B.A.O., D.P.H.

Surgery.
Professor of Surgery—HENRY L. BARNIVILLE, B.A., M.D., M.Ch.
Professor of Systemic Surgery—HENRY S. MEADE, F.R.C.S.I., M.Ch.

Midwifery and Gynæcology.
Professor—ROBERT P. FARNAN, M.B., B.Ch., M.A.O.
Lecturer (Obstetrics)—JAMES J. O'KELLY, B.A., M.B., B.Ch., M.A.O.
Lecturer (Gynæcology)—REGINALD WHITE, F.R.C.S.I.

Materia Medica and Therapeutics.
Professor—THEOBALD W. T. DILLON, M.B.

Ophthalmology.
Professor—LOUIS WERNER, B.A., M.B., F.R.C.S.I.

Medical Jurisprudence.
Lecturer—JOHN McGRATH, M.Sc., M.B.

Dental Surgery.
Professor—E. SHERIDAN, M.D.S., F.R.C.S.I., L.D.S.

Dental Mechanics.
Professor—J. I. POTTER, M.D.S., L.D.S.

Orthodontia.
Lecturer—LAURENCE FLANAGAN, B.D.S., M.B., B.Ch.

All Scholarship Examinations in Medicine will be held on October 2nd.

Introductory Course.—Particular attention is paid to beginners, for whom a special Introductory Course is delivered at the commencement of the Winter Session, beginning on October 2nd.

Regulations for Courses of Study for Degrees, and General Regulations containing information as to Scholarships, etc., may be obtained from the REGISTRAR, University College, Dublin.

ROTUNDA HOSPITAL, DUBLIN.

THE HOSPITAL contains 135 beds. Over 2,000 maternity cases and nearly 1,000 gynaecological patients are treated during the year. Besides the Hospital, there is an external Maternity Department with over 2,000 cases. The routine for students consists of attendance at the Morning Lectures on Midwifery and Gynaecology, examination of patients in the Gynaecological Department, attendance at operations, and all abnormal labour in the Hospital Wards and conduction of labour cases in the intern and extern departments. Students, both qualified and unqualified, attend the Ante-Natal Clinics, the Infants' Ward and Dispensary. A Bio-Chemist has just been appointed who is carrying out the ZONDEK-ASCHHEIM test for pregnancy, and is prepared to help any Post-Graduates who are keen on doing research work on the material in the Hospital. An X-Ray Plant is used for diagnosis and treatment.

Qualified students are given facilities for observing and following the course of all abnormal cases in the Hospital or in the district and, where practical, are allowed to perform some minor obstetric and assist at gynaecological operations.

The Hospital Courses are always going on during the year, and Students can join at any time. The Class is limited, therefore it is advisable to register in advance. Board and residence can be obtained at the Hospital; the living accommodation has been much improved lately. One grass and two hard tennis courts and one standard squash rackets court are available for students living in the residents' Mess. Extra classes in gynaecological diagnosis and operative midwifery are conducted by Assistants to the Master.

Fees, one month, £6 6s.; months other than the first, £4 4s.; three months, £12 12s.; six months, £21.

The L.M. certificate is given to fully-qualified practitioners of Medicine on examination after six months' resident attendance at the Hospital.

Full particulars from A. H. DAVIDSON, M.D., Master, Rotunda Hospital.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN
(UNIVERSITY OF LONDON),
Hunter Street, Brunswick Square, W.C.1.

Full Courses are arranged for the London M.B., B.S. Degrees, and the Examinations of other qualifying bodies. The Clinical Course is pursued at the Royal Free Hospital. Arrangements are also made for students to attend the practice of certain Special Hospitals.

Appointments at Hospital and Medical School are open to students after qualification; Scholarships, Bursaries, and Prizes of the value of £1,950 are awarded annually.

Residence arrangements are made for students in the Students' Chambers connected with the School.

The Session begins on October 1st each year, and application for admission should be made by March 1st.

Prospectus and full information can be obtained from the Warden & Secretary.

ELIZABETH BOLTON, M.D., B.S.,
Dean.

UNIVERSITY OF DUBLIN
SCHOOL OF PHYSIC.
TRINITY COLLEGE.

THE WINTER SESSION will begin on 1st October, 1934.

All information regarding Courses for the Medical and Dental Degrees, for the Diploma in Public Health, for the Diploma in Gynaecology and Obstetrics, and for the Diploma in Psychological Medicine may be obtained on application to the Registrar of the School of Physic, Trinity College, Dublin.

THE MEDICAL AND DENTAL DEFENCE UNION OF SCOTLAND, LIMITED.

Secretaries and Registered Office: Millar, Thomson & Dunlop, C.A., 113, St. Vincent Street, Glasgow.

ANNUAL SUBSCRIPTION £1. ENTRANCE FEE 10/-.

No entrance fee to those joining within 12 months of obtaining qualification. Benefits include defence of claims for alleged negligence in professional work, including unlimited indemnity and costs, and advice on professional difficulties.

Particulars and forms of application can be obtained from the Secretaries at the above address.

ST. MUNGO'S COLLEGE, GLASGOW.

THE MEDICAL SCHOOL OF THE GLASGOW ROYAL INFIRMARY.

SESSION 1934-35.

The WINTER SESSION will be opened on MONDAY, OCTOBER 8th, 1934.

LECTURES AND DEMONSTRATIONS.

Physics, 8 a.m.—Prof. G. Russell, M.A., B.Sc.
*Chemistry, 9 a.m.—Prof. Alex B. Steven, B.Sc., F.I.C.
Practical Chemistry, as arranged.—Prof. Alex B. Steven, B.Sc., F.I.C.
Biology (including practical).—Prof. A. J. Allison.
*Anatomy, Lectures, daily 11 a.m.; Practical, daily 9 a.m. till 5 p.m.; Surgical, during 2nd term, days and hours to be arranged. (Vacant.)
*Surgery, 11 a.m., Operative Surgery, at periods and hours to be arranged.—Prof. John A. C. Macewen, M.B., C.M., B.Sc., F.R.C.P.S.
Physiology, 12—1, Practical Physiology, twice weekly at hour to be arranged.—Prof. Eric G. Gastler, B.A., M.B., Ch.B.; M.R.C.P., F.R.F.P.S.
Clinical Surgery.—The Surgeons of the Glasgow Royal Infirmary.
*Midwifery, daily at 2 p.m.—Prof. W. C. Armstrong, M.B., Ch.B.
*Practice of Medicine, 12 noon.—Prof. John Henderson, M.D., Ch.B., F.R.F.P.S.
*Clinical Medicine.—The Physicians of the Glasgow Royal Infirmary.
Materia Medica and Therapeutics, as arranged, usually 12 noon.—Prof. Crawford, M.D., F.R.F.P.S.
*Pathology, 2 p.m.—Pathologist to Royal Infirmary.
*Ophthalmology, Tuesdays and Fridays, at 4 p.m. — Professor Barrie, M.B., Ch.B., F.R.F.P.S.
*Diseases of the Throat, Nose, and Ear, 11 a.m. —Prof. James Harper, M.A., M.B., Ch.B., F.R.F.P.S.
Diseases of the Skin, twice weekly as may be arranged.—Prof. George Harvey, M.B., Ch.B.
*Gynaecology, 3 p.m. or hour to be arranged.—Prof. W. C. Armstrong, M.B., Ch.B.
*Psychological Medicine, 3 p.m. Fridays, Clinique at Hawkhead Asylum, 10.15 a.m. on Saturdays.—Prof. James H. Macdonald, M.B., Ch.B., F.R.F.P.S.
*Medical Jurisprudence, 11 a.m., during 1st term; Public Health, 11 am., during 2nd term.—Prof. Andrew Allison, M.B., Ch.B., B.Sc., D.P.H., F.R.F.P.S.
Tuberculosis.—Prof. James Crocket, M.D., D.P.H., F.R.C.P.Ed.
Hospital and Dispensary, daily, 2 p.m.

The fees for all the Lectures, including Hospital attendance necessary for candidates for the diplomas of the English or Scottish Colleges of Physicians and Surgeons, amount to about £120.

Students who have fulfilled the conditions of the Carnegie Trust as regards Scottish birth or extraction and Preliminary Examination are eligible for the benefits of this Trust during the whole course of their studies at St. Mungo's College.

The Syllabus of the Medical Curriculum, giving particulars of the classes, fees, etc., may be had gratis on application to the Secretary of the Medical Faculty, 86, Castle Street, Glasgow, or from

THOMAS B. FERGUSON, Secretary.
97, West Regent Street, Glasgow.

*These classes qualify for graduation in Medicine in the University of Glasgow.

UNIVERSITY OF LONDON.
KING'S COLLEGE.

REVISION COURSES in ANATOMY and PHYSIOLOGY will be held during SEPTEMBER, commencing on Monday, September 3rd, 1934.

Fee for each subject £3 3s.

Applications for admission should be addressed to the Dean of the Medical Faculty, King's College, Strand, W.C.2.

THE WELSH NATIONAL SCHOOL OF MEDICINE.
(UNIVERSITY OF WALES).

The Welsh National School of Medicine contains the following Departments:

Materia Medica and Pharmacology; Pathology and Bacteriology; Medicine; Surgery; Obstetrics and Gynaecology; Preventive Medicine and Public Health; Tuberculosis.

COURSES OF INSTRUCTION FOR MEDICAL DEGREES AND DIPLOMAS.

Courses of Instruction are given by the School in the above Departments, for the Medical Degrees of the University of Wales, and may be attended by students preparing for Degrees and Diplomas of other Examining Bodies.

The next Session opens on October 2nd, 1934.

Hospital Instruction is given at the Cardiff Royal Infirmary, at the City Lodge Hospital, Cardiff, at the Llandough Hospital, at the Cardiff City Mental Hospital, at the Cardiff City Sanatorium (Fevers), at the Prince of Wales' Hospital (Orthopaedic), and at the Cefn Mably and Glan Ely Hospitals (Tuberculosis).

POST-GRADUATE STUDY.

Facilities are given in the School for approved research in all branchess of Medicine and Surgery. Post-graduate Scholarships are available, ranging in value from £150 to £250 per annum.

Complete Post-graduate Courses of Instruction are given for the Diploma in Public Health, and for the Tuberculous Diseases Diploma of the University of Wales.

Application for admission to any of the Courses should be made as early as possible to the Secretary, Welsh National School of Medicine, the Parade, Cardiff, from whom further particulars may be obtained.

ROYAL NAVAL DENTAL SERVICE.

The Admiralty is prepared to receive applications for commissions as DENTAL OFFICERS in the Royal Navy. Two appointments are offered.

Candidates must be below 28 years of age on November 1st (unless granted an allowance for age, not exceeding six months, in respect of a period served in a recognised whole-time civil hospital appointment) and must be registered as British Graduates or Licentiates in Dental Surgery.

Approved candidates will be required to appear before a Selection Committee at the Admiralty, and to pass a medical examination by a Board of Naval Medical Officers as to their physical fitness for entry.

A pamphlet outlining the conditions of service and the forms to be completed by candidates may be obtained on application to the Medical Director-General of the Navy, Admiralty, London, S.W.1.

Applications, accompanied by the necessary documents, must reach the Medical Director-General not later than October 1st.

A Course of Training in Dispensing and Pharmacy is given at GORDON HALL SCHOOL OF PHARMACY, and Secretary-Dispensers can be supplied to Doctors. Sessions: January, April, and September.—Apply Principals, School of Pharmacy, Drayton House, Gordon Street, W.C.1. 'Phone: Museum 3930.

BIRMINGHAM & MIDLAND EYE HOSPITAL.

Applications are invited from duly qualified Medical Practitioners for the post of RESIDENT SURGICAL OFFICER at the above Hospital. Salary £200 per annum and £10 laundry allowance.

The Resident Staff consists of a Resident Surgical Officer and three House Surgeons, and in the event of one of the latter being promoted to the position of Resident Surgical Officer, applicants should state whether they will be willing to accept appointment as House Surgeon at a salary of £130 (rising at the end of six months' satisfactory service to £150) per annum.

Applications, with testimonials and evidence of registration, must be received not later than Thursday, September 6th next.

Church Street, Birmingham. J. W. PEARCE, General Superintendent.

37th ANNUAL EDITION.

PATON'S LIST OF SCHOOLS.

An aid to Parents in the selection of Schools and Tutors.

Crown 8vo. 980 pages. Price 5s., postage 9d.

Contains particulars with illustrations of Preparatory, Private, and Public Schools for Boys and Girls, Tutors, Co-Educational Schools, Domestic Science, Secretarial Training, and Physical Training Colleges, etc.

ADVICE ALSO GIVEN, FREE OF ALL CHARGE.

J. & J. PATON, Educational Agents, 143, Cannon Street, London, E.C.4.

CITY OF MANCHESTER.

PUBLIC HEALTH DEPARTMENT.

ABERGELE SANATORIUM—262 Beds.
(210 Children, 52 Adults.)

APPOINTMENT OF A SECOND RESIDENT ASSISTANT MEDICAL OFFICER (Male or Female).

The Public Health Committee invites applications from qualified Medical Practitioners for the position of Second Resident Assistant Medical Officer at the Abergele Sanatorium, Abergele, North Wales.

Every applicant must be a registered Medical Practitioner and unmarried.

The Sanatorium is fully equipped with all modern requirements for the treatment of Tuberculosis in children and adults.

Preference will be given to candidates who have held resident surgical and medical appointments in a General Hospital, and who have a good knowledge of Bacteriology and General Laboratory Work.

Salary £350 per annum, rising by annual increments of £25 to a maximum of £450 per annum, with board, residence, and laundry in addition, subject to the terms and conditions of the Manchester Corporation Grading Scheme. No bonus.

Applications, stating fully the age, training, qualifications, and experience of the candidates, with copies of three recent testimonials, and endorsed on the envelope "Resident Medical Officer," Abergele Sanatorium, must be addressed to the Medical Officer of Health, Sunlight House, Quay Street, Manchester, 3, only, and not to members of the Committee or Council, and must be received by him not later than Saturday, September 8th.

The candidate appointed will be under the general administrative control of the Medical Officer of Health and the immediate control of the Medical Superintendent, and will be required to commence duty on October 1st, to pass a medical examination, to devote the whole of his or her time to the duties of the position, to contribute to the Corporation Superannuation Fund, and to execute the Deed of Service.

Canvassing in any form, oral or written, direct or indirect, is prohibited.

Town Hall, Manchester. F. E. WARBRECK HOWELL, Town Clerk.
August 22nd, 1934.

LANCASHIRE COUNTY COUNCIL.

BIDDULPH GRANGE ORTHOPAEDIC HOSPITAL.

Applications are invited from duly qualified and registered Medical Practitioners for the post of JUNIOR HOUSE SURGEON at the above Hospital, which contains 88 beds.

Salary is at the rate of £150 per annum, together with board, residence, and laundry.

Preference will be given to candidates who have held resident hospital appointments and who are competent anaesthetists. The appointment will be for a period of six months in the first instance, and for a further six months at the option of the Council, but will not be renewable after that time.

Applications, with copies of two recent testimonials, should be sent not later than September 8th, to Dr. J. J. BUTTERWORTH, School Medical and Child Welfare Department, County Offices, Preston.

Duties to commence as early as possible.

County Offices, Preston. GEORGE ETHERTON, Clerk of the County Council.
August 20th, 1934.

COUNTY COUNCIL OF MIDDLESEX.

NORTH MIDDLESEX COUNTY HOSPITAL.

JUNIOR RESIDENT ASSISTANT MEDICAL OFFICER.

The County Council invite applications for the above appointment. Candidates must be registered Medical Practitioners, and must have held resident appointments in a General Hospital.

The officer appointed will work under the control of the Medical Superintendent, and devote his whole time to his official duties.

Salary £250 per annum, together with board, lodging, and laundry.

The appointment, which is for a period of six months in the first instance, may be extended for an additional six months, and is subject to one month's notice on either side. At the expiration of one year's service, the successful candidate, if considered satisfactory in all respects, will be eligible, upon recommendation of the Medical Superintendent and subject to confirmation by the County Council, for promotion to the post of Assistant Medical Officer. If not so appointed, he will leave the Council's service.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than September 15th. Canvassing, directly or indirectly, will be a disqualification.

Special application forms are not provided. Envelopes must be endorsed "Junior Assistant Medical Officer."

N.B.—North Middlesex County Hospital is a modern General Hospital with accommodation for 1,000 cases, chiefly acute. (C.D./30.)

ERNEST S. W. HART,
Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.
August 27th, 1934.

CITY OF PETERBOROUGH.

MATERNITY AND CHILD WELFARE SERVICE (Ante-Natal Clinic):

CLINIC MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners qualified as under for the post of Clinic Medical Officer to the Corporation's Ante-Natal Clinic at the Town Hall.

The gentleman appointed must be of Consulting Gynaecologist status and comply with the qualifications stipulated in the Local Government (Qualifications of Medical Officers) Order, 1930, Art. 7, i.e., be a registered Medical Practitioner, who, subsequent to qualifying, has had at least three years' experience in practice, and SPECIAL experience of practical midwifery (e.g., as Clinical Assistant in a Lying-in Hospital), also experience of Ante-natal work of a local authority.

The remuneration will be that of £4 4s. per session and reasonable expenses will be reimbursed.

In the first year of establishment, the number of sessions will not be less than twelve or more than twenty.

Applications, giving the fullest particulars of qualifications and experience, together with copies of three recent testimonials, should be sent to the undersigned not later than 12 noon on September 4th.

ARTHUR J. REEVES,
Town Clerk.

Town Hall, Peterborough.
July 31st, 1934.

CAMBRIDGESHIRE COUNTY COUNCIL.

MEDICAL OFFICER OF HEALTH.

Applications are invited for the post of County Medical Officer of Health for the Administrative County of Cambridge from men of not more than 50 years of age who are duly qualified Medical Practitioners registered in the *Medical Register* as holders of a diploma in sanitary science, public health, or state medicine. The salary offered is £1,000 per annum, and the post is designated for purposes of superannuation.

Further particulars and a form of application can be obtained from the Clerk of the Cambridgeshire County Council, Shire Hall, Cambridge. Applications must be received not later than Monday, September 24th.

COVENTRY & WARWICKSHIRE HOSPITAL.

Main Hospital 307 Beds;
Convalescent Hospital 40 Beds.
Seven Resident Medical Officers.

RESIDENT CASUALTY OFFICER (Male) wanted. Salary £125 per annum, with board, laundry, and attendance. Candidates must be duly qualified and registered.

Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned.

(Miss) R. HOOPER, Secretary.

DONCASTER RURAL DISTRICT COUNCIL.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

Applications are invited for the appointment of Medical Officer of Health, subject to the provisions of the Local Government Act, 1933, and the Sanitary Officers Order, 1926. Candidates must not be more than 45 years of age, and should possess a Diploma in Public Health.

The person appointed will be required to perform all the duties imposed on a Medical Officer of Health under relevant Acts and Orders and will also be required to carry out all such duties as the Council may, with the consent (if necessary) of the Ministry of Health, from time to time direct.

The person appointed must not engage in private practice, and must devote his whole time to the duties of the office, the position being reviewed (but not necessarily altered) when the County Council formulate their arrangements as to the combination of Districts under the Local Government Act, 1929.

The appointment will be subject to the approval of the Ministry of Health, and also to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate may be required to pass a medical examination.

Salary £800 per annum, and an allowance of £75 per annum for travelling expenses. Office accommodation and clerical assistant will be provided.

Applications, stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, should be sent so as to reach the undersigned not later than first post on Saturday, September 8th, endorsed "Medical Officer of Health."

Canvassing in any manner whatsoever is prohibited and will disqualify candidates.

ROY BOWERS,
Clerk to the Council.

Nether Hall, Doncaster.
August 18th, 1934.

LEICESTER ROYAL INFIRMARY. (504 Beds.)

VACANCIES FOR OCTOBER 1st.

HOUSE SURGEONCIES.

Two vacancies will occur. Salary at the rate of £125 per annum. Applicants must have held a resident Hospital post or had similar experience of Hospital work. Candidates will be considered for Senior Casualty Officer if they so intimate.

CASUALTY OFFICERS (TWO).

A vacancy will arise for a Senior Casualty Officer of Fellowship standard. Salary at the rate of £125 per annum. Also for a Junior Casualty Officer. Salary £100 per annum.

HOUSE PHYSICIANCY.

A vacancy will occur for a House Physician. Salary at the rate of £125 per annum. Applicants must have held a resident hospital post or had similar experience of Hospital work.

TWO JUNIOR RESIDENT ANAESTHETISTS.

Two vacancies will arise. Salary £125 per annum, with board and residence. Applicants will please give particulars of special experience in the administration of Anaesthetics, and enclose copies of testimonials, with particular reference to Anaesthetic work.

Applications for the above posts to be forwarded to the House Governor and Secretary, not later than September 3rd; together with copies of three testimonials.

Appointments for six months will be made on September 12th.

August 20th, 1934.

ANCOATS HOSPITAL, MANCHESTER.

ASSISTANT PATHOLOGIST (lady or gentleman): Whole-time appointment, no private work allowed. Salary £300 to £350 according to experience; live out. Lunch and tea provided.

RESIDENT MEDICAL OFFICER to commence duty on October 1st. One having held a previous appointment essential. Appointment for six months. Salary at the rate of £150 per annum, with board, residence, etc.

HOUSE PHYSICIAN. Applications are invited for the post of House Physician. Duties to include some Casualty work. Appointment for six months. Salary at the rate of £100 per annum, with board, apartments, laundry, etc.

MEDICAL REGISTRAR (lady or gentleman). To assist the Honorary Physician in the Out-patient Department on Monday, Wednesday, and Thursday mornings. Honorarium £50 per annum. Appointment for twelve months, renewable on January 1st of each year.

Applications are invited for the above posts from duly qualified and registered Medical Practitioners. Applicants should state age, qualifications, experience, and give full particulars, and forward their applications on or before Wednesday, September 12th, together with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
General Supt. & Secretary.

EGYPTIAN GOVERNMENT.

EGYPTIAN MINISTRY OF EDUCATION.

Applications are invited from fully qualified Medical Women for the post of LADY MEDICAL OFFICER for Girls' Schools under the Ministry of Education, Egypt.

Candidates should state their age and previous experience.

The successful candidate will be expected to devote her whole time to the work of the Ministry, and inspect Schools in the Provinces if required.

The salary will be £E.40 per month, subject to current Egyptian Government stamp duties (net equivalent in English money approximately £38 5s. 7d.).

A transfer allowance equal to one month's net salary will be paid to the successful candidate if resident in Europe.

The appointment is on contract for three years, and renewable for a further period if the work gives satisfaction.

Applications should be addressed to The Director, Egyptian Education Office, 39, Victoria Street, London, S.W.1, and received not later than September 15th.

ALEXANDRA HOSPITAL FOR CHILDREN WITH HIP DISEASE, SWANLEY, KENT.

Applications are invited for the post of RESIDENT ASSISTANT MEDICAL OFFICER. Candidates must be unmarried, fully qualified, and should have held a resident surgical appointment. The successful candidate will be required to take up duty on October 1st. The appointment is for six months, with eligibility for re-election. Salary to commence at £200 a year, with board and lodging.

Applications, stating age and qualifications, with copies of two testimonials, should be sent not later than September 8th to the undersigned at the London Offices, 107, Southampton Row, W.C.1, from whom the particulars of the duties and conditions of the appointment may be obtained.

STANLEY SMITH, Secretary.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.11. (121 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). The post is that of Senior Resident Officer, and the work being chiefly Surgical, preference will be given to candidates holding the F.R.C.S. qualification.

The appointment is for twelve months commencing on October 1st.

Salary £200 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before September 12th.

W. S. RANDOLPH BISS, Secretary-Supt.

EAST HAM MEMORIAL HOSPITAL, Shrewsbury Road, E.7. (100 Beds.)

Applications are invited for the post of HOUSE SURGEON to Special Departments and Casualty Officer (male) for six months commencing October 1st. Salary at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, together with copies of three testimonials, should reach the undersigned by September 8th.

REGINALD PERRY, Secretary.

EAR AND THROAT HOSPITAL, BIRMINGHAM.

THIRD HOUSE SURGEON wanted (non-resident). Must be qualified and with Clinical experience. Salary at the rate of £150 per annum, with lunch on six week-days, and an allowance at the rate of £50 per annum in lieu of full board and lodging. Appointment for six months, commencing October 1st.

Applications and testimonials to be forwarded on or before Monday, September 17th to the undersigned.

W. H. LOMAS, Secretary.

FORSTER GREEN HOSPITAL FOR CONSUMPTION AND CHEST DISEASES, FORTBREDA, BELFAST.

A vacancy for a HOUSE PHYSICIAN will occur on October 1st. The appointment will be for a period of six months, renewable for a further six months.

Salary £150 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, to be sent to the Secretary, 99, Scottish Provident Buildings, Belfast, on or before September 15th.

NORTHAMPTON GENERAL HOSPITAL.
(254 Beds.)

There will be vacancies on October 1st next for Five Male Resident Medical Officers: ONE HOUSE PHYSICIAN, TWO HOUSE SURGEONS, ONE HOUSE SURGEON to the Ear, Nose and Throat Department, and ONE CASUALTY OFFICER.

One of the candidates will be appointed Senior Resident Medical Officer for twelve months at a salary of £250 per annum. Applicants are required to state whether they will be willing to stay for this period.

The other appointments will be made for six months, and the salary will be £150 per annum. All appointments include board, residence, and laundry.

British nationality. Candidates must be duly qualified and registered.

Applications, stating age, qualifications, etc., with copies of testimonials, to reach the undersigned not later than the first post on Wednesday, September 12th.

H. ST. JOHN WOOD,
August 27th, 1934. Secretary-Supt.

ROYAL SALOP INFIRMARY, SHREWSBURY. (150 Beds.)

APPOINTMENT OF RESIDENT HOUSE PHYSICIAN.

Applications are invited from fully qualified men for the appointment of Resident House Physician, vacant September 17th. Salary £160 per annum, with board, residence, etc.

The appointment is for six months, subject to reappointment. Resident Staff comprises Resident Surgical Officer, House Physician, and Casualty Officer and Resident Anaesthetist. The Resident House Physician is Resident Officer to the Medical Wards of the Hospital under the direction of three Honorary Physicians, and is also Resident Officer to the Maternity Department for difficult cases under the direction of the Honorary Obstetrician.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned not later than Sept. 12th.

Board Room. J. W. NOBLE,
August 25th, 1934. Secretary-Supt.

ROYAL MANCHESTER CHILDREN'S HOSPITAL.
OUT-PATIENTS' DEPARTMENT,
Gartside Street, MANCHESTER.

Wanted, for the Out-Patients' Department, TWO ASSISTANT MEDICAL OFFICERS, non-resident, salary £150 per annum, who will be appointed for six months. Duties to commence October 1st. Candidates must be on *Medical Register*. Particulars of the duties can be obtained from the Secretary. The hours of duty are from 9 a.m. till 1 p.m., or until the work of the Dispensary is finished. Patients' attendances number about 100,000 per annum.

Applications, stating age and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Thursday, September 6th.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY, Secretary.

ROYAL NORTHERN HOSPITAL, Holloway, N.7.

Applications are invited for the following posts:

(1) HOUSE SURGEON, vacant on October 15th. The appointment is for nine months (six months as House Surgeon and three months as Casualty Officer) with salary at the rate of £70 per annum, with board, residence, and laundry.

(2) OBSTETRIC HOUSE SURGEON, vacant on October 15th The appointment is for nine months (six months as Obstetric House Surgeon, three months as Casualty Officer). Salary as above.

Applications, with copies of testimonials, should be sent by September 7th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

SCARBOROUGH HOSPITAL & DISPENSARY.
(70 Beds—Two Resident House Surgeons.)

Wanted, November 1st, ONE HOUSE SURGEON (female).

Duties include Home Visiting (daily average 1933, 2.5 visits).

Salary at the rate of £175 per annum, with board, residence, etc.

Appointment until April 30th, 1935.

Applications, stating age, with copies of testimonials and essential particulars, to be sent to the Hon. Secretaries, from whom all further particulars may be obtained, not later than Sepember 17th.

ROYAL DEVON AND EXETER HOSPITAL, EXETER. (230 Beds.)

HOUSE SURGEON (Male).
HOUSE SURGEON to the Ear, Nose, and Throat Dept. (Male).

Applications are invited for either of the above posts shortly becoming vacant.

The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £150 per annum, with board, apartments, and washing.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned as soon as possible.

By Order of the Committee,
S. S. COLE,
August 20th, 1934. Secretary & Manager.

ST. MARY'S HOSPITAL, W.2.

VENEREAL DISEASES DEPARTMENT.

Applications are invited for the post of ASSISTANT DIRECTOR (part-time) from qualified Medical Practitioners with experience in the treatment of Venereal Diseases. Salary £350 per annum.

The appointment is for a period of one year, the holder being eligible for re-election.

Applications, with copies of testimonials, not exceeding three in number, should reach the undersigned (from whom particulars of the office may be obtained) not later than September 21st.

W. PARKES, House Governor.

SALFORD ROYAL HOSPITAL.
(263 Beds.)

Applications are invited for the post of HONORARY ASSISTANT SURGEON.

Candidates must be Fellows of the Royal College of Surgeons of England.

Applications, accompanied by certificates of age and of registration, and by not more than six testimonials, should be delivered to the undersigned on or before September 14th next.

By Order of the Board,
H. B. SHELSWELL,
August 27th, 1934. Gen. Supt. & Sec.

SALFORD ROYAL HOSPITAL.
(263 Beds.)

Applications are invited from registered (male) candidates for:

TWO HOUSE SURGEONS;
CASUALTY HOUSE SURGEON;

for six months from October 1st. Salary £125 per annum.

Forms of application, obtainable from the undersigned, should be delivered on or before September 11th next.

By Order of the Board,
H. B. SHELSWELL,
August 27th, 1934. Gen. Supt. & Sec.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.1.

Applications are invited for the post of HOUSE SURGEON for a period of six months commencing on November 1st next. Salary at the rate of £100 per annum, with board, lodging, and laundry. Previous experience as House Surgeon essential.

Applications, accompanied by copies only of three testimonials, must reach the Secretary at the Hospital on or before Saturday noon, September 22nd.

G. H. HAWKINS, Secretary.

ST. MARY'S HOSPITALS, MANCHESTER.

TWO HOUSE SURGEONS for the WHITWORTH STREET WEST HOSPITAL (Maternity); and THREE for the WHITWORTH PARK HOSPITAL (two for the Gynaecological Department and one for the Children's Department), each for a period of six months from November 1st next. Salaries at the rate of £50 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned on or before September 13th.

R. RATCLIFFE, Secretary.

NORTH STAFFORDSHIRE ROYAL INFIRMARY, STOKE-ON-TRENT. (389 Beds.)

ASSISTANT HOUSE PHYSICIAN.

Applications are invited for the post of Assistant House Physician. Salary £125 per annum, with board, residence, etc. Previous hospital experience desirable. Applications, stating age and experience, with copies of testimonials, to be sent in immediately.

W. STEVENSON,
July 30th, 1934. Secretary & House Gov.

THE PRINCESS BEATRICE HOSPITAL, Richmond Road, Earl's Court, S.W.5.
GENERAL HOSPITAL—80 Beds.

RESIDENT MEDICAL OFFICER (male) required for a period of six months in the first place from October 1st, eligible for re-election. Salary at the rate of £150 per annum, with board, residence, and laundry. Previous Resident experience essential. Full particulars may be obtained from the Secretary, by whom applications, with copies of three recent testimonials, should be received not later than September 3rd.

HOUSE PHYSICIAN & CASUALTY OFFICER (Male) required for a period of six months from October 1st. Salary at the rate of £110 per annum with board, residence, and laundry. Previous Resident experience desirable but not essential. Full particulars may be obtained from the Secretary by whom applications, with copies of three recent testimonials, should be received not later than September 3rd.

HOUSE SURGEON AND CASUALTY OFFICER (Male) required for a period of six months from October 1st. Salary at the rate of £110 per annum, with board, residence, and laundry. Previous Resident experience desirable but not essential. Full particulars may be obtained from the Secretary by whom applications, with copies of three recent testimonials, should be received not later than September 3rd.

ST. BARTHOLOMEW'S HOSPITAL.

WHOLE-TIME REGISTRAR IN THE CANCER DEPARTMENT.

Applications are invited for the post of Whole-time Registrar in the Cancer Department of the above Hospital.

The salary will be at the rate of £500 per annum.

The duties will be to assist in co-ordinating the work of Cancer throughout the Hospital and to carry out such research work as may be approved by the Director of the Cancer Department.

Applications should reach the undersigned not later than Monday, September 17th.

THOMAS HAYES,
July 3rd, 1934. Clerk to the Governors.

THE INSTITUTE OF RAY THERAPY AND ELECTRO-THERAPY,
152, Camden Road, N.W.1.

A PART-TIME MEDICAL OFFICER is required in September. The duties include assisting in the treatment and collecting clinical data.

The appointment is for not less than six months, and is eminently suitable for a man doing post-graduate study and provides good experience in all forms of electro-therapy.

Full board, residence, and laundry is provided in addition to an honorarium at the rate of £100 per annum.

Applications, accompanied by three testimonials, should be sent to the Hon. Secretary, at the above address, not later than Sept. 4th.

THE RADIUM INSTITUTE, Riding House Street, London, W.1.

Applications are invited for the post of HOUSE SURGEON. Candidates must be fully qualified, unmarried, and of British nationality. The appointment is for a term of six months, and the successful candidate will be required to take up his duties on October 1st next. The salary will be at the rate of £150 per annum, with board, lodging, and laundry.

Applications, stating age, qualifications, and experience, with copies of three recent testimonials, must be received at the Institute not later than the first post of Wednesday, September 12th.

THOS. A. GARNER, Secretary.

THE MOTHERS' HOSPITAL OF THE SALVATION ARMY,
Lower Clapton Road, Clapton, E.5.

Applications are invited from Medical Women for the post of JUNIOR RESIDENT MEDICAL OFFICER, vacant October 1st. Salary £80 per annum, with board, residence, and laundry. The appointment is for six months.

Applications, with testimonials, must be sent to the Secretary on or before Friday, Sept. 14th.

EDGAR DIBDEN Secretary.

ROYAL HOSPITAL, RICHMOND, SURREY.

JUNIOR HOUSE SURGEON (Male) required to take up duties on October 1st. Salary at the rate of £100 per annum, with board, furnished apartments, and laundry. Candidates must be fully qualified, registered, and single. The appointment will be for six months, after which the successful candidate will be eligible for the senior post. Applications, stating age, experience, and copies of three recent testimonials, must be forwarded to the Secretary-Superintendent immediately.

HULL ROYAL INFIRMARY.

The Appointing Committee invite applications for the office of HONORARY ASSISTANT PHYSICIAN to the Infirmary.

Candidates must be fully qualified Medical Practitioners and be registered.

The appointment will be for five years in the first instance.

Applications, together with copies of testimonials, should be addressed to "The Chairman, Board of Management, Hull Royal Infirmary," and should be forwarded on or before October 15th.

Candidates are prohibited from canvassing, but copies of their applications and testimonials should be sent to the members of the Appointing Committee.

R. J. CARLESS,
August 27th, 1934. House Governor.

HOUSE SURGEON REQUIRED FOR THE NEWCASTLE THROAT, NOSE, AND EAR HOSPITAL, RYE HILL, NEWCASTLE-UPON-TYNE, preferably one who has had some experience in Throat, Nose, and Ear work.

As this Hospital is recognised for the D.L.O. Diploma, the position is suitable for anyone preparing for that degree.

Salary £100 per annum, together with board, residence, and laundry.

Applications, giving age, qualifications, and experience, with copies of three recent testimonials, to the undersigned not later than September 7th.

Rye Hill, STEPHEN CROUCH, F.I.S.A.
Newcastle-upon-Tyne. Secretary.

NORTH RIDING INFIRMARY, MIDDLESBROUGH.

The General Board invite applications for the post of HONORARY SURGEON.

In the event of the vacancy being filled from the Assistant Honorary Surgical Staff, candidates are requested to state whether they would then desire to apply for the position of Assistant Honorary Surgeon.

Applications, stating age, qualifications, and experience, together with copies of three testimonials, must be sent to the undersigned not later than Monday, September 10th. The appointment will be made on Friday, September 14th, 7.30 p.m.

By Order of the General Board,
GERALD A. KENYON,
August 20th, 1934. Secretary-Supt.

HOVE GENERAL HOSPITAL, HOVE, SUSSEX: (24 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). The appointment is for six months. Salary £150 per annum, with board, residence, and laundry.

The appointment offers excellent opportunities for surgical experience and for acquiring knowledge of radium treatment.

Applications, stating age, qualifications, together with three recent testimonials, must be forwarded to the undersigned not later than Saturday, September 8th.

H. AUBREY FROGGATT, Secretary-Supt.

HARROGATE AND DISTRICT GENERAL HOSPITAL. (126 Beds.)

Applications are invited for the posts of HOUSE PHYSICIAN AND CASUALTY OFFICER (male, unmarried), HOUSE SURGEON (male, unmarried). The appointments are for a period of six months, duties to begin on October 1st. Salary in both cases at the rate of £150 per annum.

Applications, with copies of two recent testimonials, must be made on special forms obtainable from the undersigned.

S. C. W. DISNEY, Secretary.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.
(54 Beds. 14,500 Out-patients per annum.)

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for six months from October 1st. Salary at the rate of £100 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester.

JOHN NALL, Secretary.

MARGATE AND DISTRICT GENERAL HOSPITAL. (98 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male).

Salary £150 per annum, with board and laundry. Duties to commence at earliest possible date.

Applications, accompanied by copies of testimonials, should be addressed to the Secretary at the Hospital as early as possible.

THE JESSOP HOSPITAL FOR WOMEN (FIRTH AUXILIARY), NORTON, SHEFFIELD.

Applications are invited for the post of RESIDENT MEDICAL OFFICER from registered Medical Practitioners (male or female).

The appointment will be for six months, commencing October 1st, subject to renewal for a further six months, with salary at the rate of £150 per annum, plus board, residence, and laundry.

Previous Obstetrical experience is desirable.

The Firth Auxiliary Hospital contains 47 beds, of which 23 are set apart for the treatment of Puerperal Sepsis, the remainder being for Ante-Natal and Gynaecological cases.

Applications should be lodged with the undersigned, addressed to the Jessop Hospital for Women, Sheffield, on or before Tuesday, September 4th.

DAVID OSWALD, Supt. & Secretary.

THE CANCER HOSPITAL (FREE)
(Incorporated under Royal Charter),
Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON, to commence duties on October 1st. Salary at the rate of £100 per annum.

The appointment is for six months and subject to rules, a copy of which may be obtained from the Secretary.

Previous experience as a House Surgeon is indispensable.

Applications, with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Tuesday, September 11th.

CLEMENT COBBOLD, Secretary.

THE CHILDREN'S HOSPITAL, SHEFFIELD.
(110 Beds—Three Residents.)

Applications are invited for the following posts, now vacant.

HOUSE PHYSICIAN.
HOUSE SURGEON.

The appointments are for six months, with salary in each case at the rate of £100 per annum, with board, residence, and laundry.

Candidates (male and unmarried), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of three recent testimonials, to the undersigned.

T. H. G. GARTLAND, Secretary.

THE WEST NORFOLK AND KING'S LYNN GENERAL HOSPITAL.

RESIDENT SURGICAL OFFICER.

Applications are invited for the above post which will become vacant on September 29th. Salary £300 per annum.

The duties include much operative work, and preference will be given to a candidate holding the F.R.C.S.Eng. diploma.

Applications, with copies of recent testimonials, should be sent to the undersigned as early as possible, and in any case not later than September 8th.

JOSEPH E. SEARJEANT, F.C.G.S.,
House Governor & Secretary.

THE DEWSBURY AND DISTRICT GENERAL INFIRMARY.

HONORARY ORTHOPAEDIC VISITING SURGEON.

Applications are invited for the above post. In accordance with the laws of the Hospital, the Surgeon appointed must be a Fellow of the Royal College of Surgeons of England, and must also be an Honorary Assistant Surgeon on the Staff of a Teaching Hospital associated with a University.

Further information as to the duties attaching to the post may be obtained from the undersigned, to whom applications should be sent before September 10th.

FRED SMITH, Secretary-Supt.

MILLER GENERAL HOSPITAL, Greenwich Road, S.E.10.

Applications are invited for the following posts:

HOUSE PHYSICIAN. Salary £100 p.a.
HOUSE SURGEON. Salary £100 p.a.

Board, residence, and laundry are provided.

Candidates (male) must be unmarried. The appointments are for six months from October 1st next. There are six Resident Officers.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary not later than September 3rd next.

August 20th, 1934.

WEST LONDON HOSPITAL, Hammersmith Road, W.6. (235 Beds.)

Required, ONE HOUSE PHYSICIAN, ONE HOUSE SURGEON (General and some Deep X-Ray Therapy), ONE HOUSE SURGEON for Throat, Nose, and Ear Department (with some anaesthetic duties). These three appointments (males) are tenable for six months from October 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodgings, and laundry allowance.

Candidates must be registered under the Medical Act. Applications (which must be on printed forms, obtained from me) must reach me not later than Thursday, September 13th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at the Medical Council Meeting on Friday, September 21st at 4.30 p.m. and the House Committee Meeting at 5 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

WEST BROMWICH AND DISTRICT GENERAL HOSPITAL. (130 Beds.)

Applications are invited for the posts of
1. HOUSE SURGEON.
2. HOUSE PHYSICIAN.
3. CASUALTY OFFICER.

Candidates (male or female) must be doubly qualified. Salary in each case, at the rate of £200 per annum, with board, residence, and laundry.

The appointments are for six months and the candidates appointed will be required to take up their duties on October 1st next.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to the undersigned on or before September 10th.

By Order,
Edward Street, FRANK I. HANCOCK,
West Bromwich. Secretary & Supt.

WINSLEY SANATORIUM, near BATH.

The Governors invite applications for the appointment of a whole-time ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250, with apartments, board, laundry, etc.

The appointment will be made for a period of twelve months (subject, however, to termination during such period by one calendar month's notice on either side).

Applicants should state age, qualifications, experience, etc., and submit three testimonials by September 17th next.

T. A. W. CARLISLE,
Winsley Sanatorium, Secretary.
Near Bath. August 23rd, 1934.

WARNEFORD GENERAL HOSPITAL, LEAMINGTON SPA. (156 Beds.)

Required, HOUSE SURGEON for Casualty and Special Departments (confined post). Special departments include Maternity, Ear, Nose, and Throat, and V.D. Six months' appointment. Salary £150 per annum, with board and laundry. Applications from registered Medical Practitioners (single men only) should be sent together with three recent testimonials to the undersigned by Thursday, September 6th.

EDWARD L. WARGMAN,
House Governor & Secretary.

WREXHAM AND EAST DENBIGHSHIRE WAR MEMORIAL HOSPITAL.
(109 Beds.)

TWO RESIDENT HOUSE SURGEONS (male or female) required by the above Hospital, to commence duty on September 19th. Appointment for a period of six months. Salary £150 per annum, with board and laundry.

Applications stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent immediately to the undersigned.

LESLIE SPENCER,
August 10th, 1934. Secretary.

ACTON HOSPITAL, W.3.

JUNIOR RESIDENT MEDICAL OFFICER (male, unmarried), required to commence duties October 1st, with promotion to Senior appointment on January 1st, 1935, if satisfactory. Commencing salary £150 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered. Applications, stating age, nationality, and qualifications, together with a copy of three recent testimonials, should reach the Secretary, Acton Hospital, Gunnersbury Lane, W.3, by Saturday, September 8th.

DONALD C. D. SWORD,
August 24th, 1934. Secretary.

BURY INFIRMARY, LANCS.
(127 Beds.)

Applications are invited for the post of HOUSE SURGEON to Special Departments, which include Midwifery and Gynaecology, Eye, Ear, Nose, and Throat. The appointment is for six months at a salary at the rate of £175 per annum, with board, residence, and laundry. The successful applicant will be required to commence duties as soon as possible.

Applications, stating age, qualifications, and nationality, with copies of three recent testimonials, to be sent to the undersigned not later than September 5th.

Particulars of duties may be had on application.

ALEX. W. MAITLAND, Hon. Secretary.

CORNELIA AND EAST DORSET HOSPITAL, POOLE, DORSET. (110 Beds.)

HOUSE SURGEON.

Applications are invited (from single men) for the post of House Surgeon (senior of two). Salary £150 p.a., with usual emoluments.

Duties to commence October 1st. Period six months.

Applications, stating age, nationality, experience, and qualifications, together with copies of three recent testimonials (which will not be returned) should reach the undersigned at the Hospital by September 8th next.

Preference will be given to applicants who have already held a resident appointment in a Hospital.

E. S. FOLEY, Secretary.

CHELTENHAM GENERAL AND EYE HOSPITALS.

HONORARY PATHOLOGIST.

The Board of Management invite applications for the post of Honorary Pathologist.

Candidates must be Graduates in Medicine of a recognised University of Great Britain or Ireland, and must have had special training and experience in Pathological work.

Applications, with copies of testimonials, should be sent in sealed envelopes endorsed "Pathologist," to the undersigned by September 14th.

Personal canvass of members of the Board is expressly forbidden.

J. CUMMING SMITH, F.C.I.S., Secretary.
The General Hospital, Cheltenham.
August 24th, 1934.

DERBYSHIRE ROYAL INFIRMARY, DERBY.
(General Hospital—360 Beds.)

Applications are invited for the post of HOUSE SURGEON for General Surgery and Ear, Throat, and Nose Department.

Candidates must be qualified and registered under the Medical Acts.

The appointment is for twelve months.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned.

Duties commence September 14th.

WALTER BANKS,
August 27th, 1934. Supt. & Secretary.

DERBYSHIRE ROYAL INFIRMARY, DERBY.
(General Hospital—360 Beds.)

Applications are invited for the post of CASUALTY OFFICER AND ORTHOPAEDIC HOUSE SURGEON.

Candidates must be qualified and registered under the Medical Acts.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned.

Duties commence October 1st.

WALTER BANKS,
August 27th, 1934. Supt. & Secretary.

SOUTHEND-ON-SEA GENERAL HOSPITAL.
(235 Beds—Six Residents.)
Specialist Staff of 18 Members.

Applications are invited for the post of HOUSE SURGEON. The appointment is for six months from October 1st. Salary at the rate of £100 per annum, with board, residence, and laundry.

Candidates must be registered (male) practitioners. Application forms may be obtained from the undersigned, and must be returned not later than Saturday, September 15th. The appointing Committee meets on Saturday, September 22nd.

C. G. PEARSON,
P. H. CONSTABLE,
Joint Secretaries.

DONCASTER ROYAL INFIRMARY AND DISPENSARY.

APPOINTMENT OF TWO HONORARY ASSISTANT SURGEONS.

The Board of Management invites applications for the above appointments.

Particulars of the duties to be assigned immediately, and copies of the Rules and Conditions governing the appointment may be had on application to the undersigned.

Fifty copies of the application, together with copies of at least three recent testimonials, must be furnished. The appointment is subject to confirmation at the Annual Meeting.

No applicant for the appointments may directly, or indirectly, make any canvass for the vote of any member of a Selection or Appointment Committee.

WALTER R. SMITH, Secretary-Supt.

DONCASTER ROYAL INFIRMARY.
(185 Beds.)

HOUSE SURGEON (male) required immediately. Five House Surgeons are resident. Salary at the rate of £175 per annum, with residence, board, and laundry.

This large industrial area offers excellent opportunities for gaining experience.

Applications, accompanied by not more than three testimonials, to be sent to the undersigned immediately.

WALTER R. SMITH, Secretary-Supt.

DEAL, WALMER AND DISTRICT WAR MEMORIAL VICTORIA HOSPITAL.

Applications are invited for the post of HONORARY PHYSICIAN. Candidates, who must be doctors of medicine, or graduates of the Universities of Great Britain or Ireland, or Fellows, Members, or Licentiates of the Royal College of Physicians of London, Edinburgh, or Ireland, to send in their applications on or before September 8th to

Kynance House, J. PRIOR
Mill Road, Deal. Secretary.

NORTH LONSDALE HOSPITAL, BARROW-IN-FURNESS. (152 Beds.)

RESIDENT CASUALTY OFFICER (male appointment) wanted immediately.

Applications are invited for the above resident appointment from fully qualified Practitioners experienced in the administration of Anaesthetics. Salary £150 per annum, with board, residence, and laundry. Applications, stating age, qualifications experience, and nationality, accompanied by copies of three recent testimonials, should be sent to the Secretary as soon as possible.

THE DEWSBURY AND DISTRICT GENERAL INFIRMARY.
(New Hospital of 100 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age and Hospital experience, together with copies of three recent testimonials, to be sent to the undersigned before September 10th.

FRED SMITH, Secretary-Supt.

MACCLESFIELD GENERAL INFIRMARY.
(100 Beds.)

Wanted at once, SECOND HOUSE SURGEON for a period of six months. Salary £150 per annum, with board and residence. Candidates must have had experience in the administration of Anaesthetics.

Applications, with copies of three testimonials, should be sent to the undersigned.

A. E. HANRAHAN, Secretary.

WORTHING HOSPITAL.

Applications are invited for the post of HOUSE SURGEON, vacant September 20th. The appointment is for six months, renewable (determinable by three months' notice on either side). Salary at the rate of £150 per annum, with board, lodging, and laundry.

Applications, giving age, qualifications, nationality, etc., together with copies of testimonials, to be sent to the Secretary at once.

A. O. KAYE, Secretary.

WATFORD AND DISTRICT PEACE MEMORIAL HOSPITAL. (118 Beds.)

HOUSE SURGEON (Female) required. The appointment is for six months. Salary £150 per annum. Duties to commence October 1st. Applications, stating age and qualifications, with copies of three recent testimonials, to be forwarded to the undersigned forthwith.

T. H. FLETCHER, Secretary.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL),
City Road, E.C.1.

Applications are invited for the office of SENIOR RESIDENT OFFICER.

Candidates must be registered Medical Practitioners, and must be prepared to begin duties on November 1st.

Salary at the rate of £150 a year, with board and residence in the Hospital. Additional income will accrue to this post, the care of private patients being included in the duties.

In the event of the First House Surgeon being appointed other candidates are requested to state whether they would accept the office of First House Surgeon at the rate of £150 a year, Second House Surgeon at the rate of £125 a year, or Third House Surgeon at the rate of £100 a year.

The appointments are for a period of six months.

Applications, with testimonials, stating age and qualifications, must be received not later than September 10th.

A. J. M. TARRANT, Secretary.

ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON. (Beds 250—Six R.M.O.s.)

CASUALTY HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence and laundry.

Candidates must hold medical and surgical qualifications of the British Empire, and be duly registered under the Medical Acts.

They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should reach the undersigned immediately.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

ROYAL ALBERT HOSPITAL AND EYE INFIRMARY, DEVONPORT.

The post of ASSISTANT HOUSE SURGEON exists.

Applicants must be fully qualified, registered, and unmarried. Salary £100 per annum, with apartments, board, and laundry free.

Applications, stating age, accompanied by copies of not more than three testimonials, should be forwarded to the undersigned without delay.

By Order of the Committee,
FRANK ROWE, Secretary.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL.

Applications are invited for the post of HOUSE SURGEON, male, for a period of six months commencing October 1st, renewable for a further period of six months on the recommendation of the Medical Board. £150 per annum, with full board, quarters, and laundry. Applicants should be registered Medical Practitioners. Applications to be addressed to the House Governor, 234, Great Portland Street, W.1, not later than September 17th.

BUTE HOSPITAL, LUTON.

HOUSE SURGEON (male) wanted to commence duties on October 1st. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, and experience, together with copies of not more than three recent testimonials, should be sent to the Secretary of the Medical Advisory Committee at the Hospital.

R. E. LINGARD,
Bute Hospital. Secretary.

GREAT YARMOUTH GENERAL HOSPITAL.
(72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments).

Applicants must be male and unmarried.

Duties to commence at once.

Salary at the rate of £140 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS, Secretary.

THE SCHIFF HOME OF RECOVERY, COBHAM, SURREY. (64 Surgical Beds.)

RESIDENT SURGICAL OFFICER, unmarried, male, who has been House Surgeon in General Hospital, required. Rate £200, all found. Three months' appointment. Candidate should be reader for examination. Preference to constituent hospitals.

Full particulars and testimonials to Secretary-Superintendent before September 8th. The appointment to commence not later than Oct. 1st.

APPOINTMENTS.—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	COUNTY COUNCIL OF KINCARDINE. *(Deputy Medical Officer of Health.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association)*	CITY OF SALFORD. *(Resident Obstetric Officer, Hope Hospital.)*
LLANELLY AND DISTRICT WORKMEN'S MEDICAL COMMITTEE. *(All Medical Appointments.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	CITY OF SALFORD EDUCATION COMMITTEE *(Assistant School Medical Officer.)*
LLWYNPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH**	CITY OF STOKE-ON-TRENT EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	CORNWALL COUNTY COUNCIL. *(Medical Superintendent—Tehidy Sanatorium, Cornwall.)*	COUNTY BOROUGH OF TYNEMOUTH. *(Assistant Medical Officer of Health—Male.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	KENT COUNTY COUNCIL. *(Assistant Resident Medical Officer, Medway Institution Hospital.)*	**PUBLIC ASSISTANCE**
		COUNTY BOROUGH OF BARROW-IN-FURNESS. *(District Medical Officer.)*

(b) Overseas.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec of Division or Branch.	Town or District.	Hon. Sec of Division or Branch.	Town or District.	Hon. Sec of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St., Sydney, N.S.W.	**QUEENSLAND.** *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**WELLINGTON, ZEW ZEALAND** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. J. P. MAJOR (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.			**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

August 29th, 1934. By Order of the Council. G. C. ANDERSON, Medical Secretary.

ALL SAINTS' HOSPITAL (FOR GENITO-URINARY DISEASES), Austral Street, West Square, St. George's Road, S.E.11.

RESIDENT HOUSE SURGEON (Male) required on October 1st, for six months, being three months as Junior House Surgeon, with salary at £100 per annum, followed by three months as Senior House Surgeon, with salary at £150 per annum.

Applications, giving particulars of age, experience, qualifications, and enclosing copies of three recent testimonials, should reach me not later than September 6th.

D. H. EADE, Secretary.

THE QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, London, E.2.

HOUSE PHYSICIAN required October 7th.

CASUALTY OFFICER required October 7th. Some Ophthalmic work additional. Six months' appointments. Salary at the rate of £100 per year, with board, lodging, and laundry.

Applications must be made on forms to be obtained from the undersigned, and must be sent in with copies of not more than four testimonials, on or before September 5th.

CHARLES H. BESSELL, Secretary.

August 8th, 1934.

FIFE DISTRICT ASYLUM.

ASSISTANT MEDICAL OFFICER wanted at Fife District Asylum, Cupar, Fife. Applicants must be fully qualified Medical Practitioners. Salary £300, with board, lodgings, and laundry. The appointment comes under the provision of the 1909 Superannuation Act. Apply, in writing, giving full particulars, to the Medical Superintendent.

NATIONAL TEMPERANCE HOSPITAL, Hampstead Road, N.W.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male). The appointment will be for a period of six months at a salary of £175 per annum, and will date as from September 21st next. Preference will be given to those who have held resident posts.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, September 14th, addressed to the Secretary.

NORFOLK AND NORWICH HOSPITAL, NORWICH. (392 Beds.)

Applications are invited for the post of HOUSE SURGEON to the Special Departments (Ear, Nose, and Throat, and Ophthalmic). Salary £120 per annum, with board, residence, and laundry. Candidates (male) who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned as soon as possible.

FRANK INCH, House Gov. & Sec.

August 10th, 1934.

THE SHEFFIELD RADIUM CENTRE.

ASSISTANT MEDICAL OFFICER wanted, for work in connection with Deep X-ray and Radium Treatment. Commencing salary £300 per annum. Applications, stating age, qualifications, and all particulars to be sent to the undersigned forthwith.

JNO. W. BARNES, F.C.I.S., Secretary.

The Sheffield Radium Centre.
The Royal Infirmary, Sheffield 6
August 15th 1934.

HULL AND SCULCOATES DISPENSARY.

Applications are invited for the appointment of a RESIDENT MEDICAL OFFICER, to devote the whole of his time to the work of the above Institution, at a salary of £450 per annum, and house, rent and rates free, to commence from November 1st.

Applications, with copies of testimonials (which will not be returned), stating age and qualifications, to be sent to the undersigned on or before September 3rd.

By Order,
J. E. D. STICKNEY, Hon. Secretary.
1, Parliament St., Hull.
August 20th, 1934.

ST PETER'S HOSPITAL FOR STONE, ETC., Henrietta Street, Covent Garden, W.C.2.

The Office of HOUSE SURGEON will fall vacant on October 1st, and applications are invited from male candidates with previous experience in a similar office at a General Hospital. The salary offered is at the rate of £75 per annum, with board, lodging, and laundry.

At the expiration of six months' term of office, and subject to the recommendation of the Medical Committee, the House Surgeon is appointed RESIDENT SURGICAL OFFICER for a further similar period. Candidates should therefore be prepared, if successful, to remain at the Hospital for twelve months in all.

Applications, accompanied by copies of testimonials, will be received by the undersigned, not later than the first post on Tuesday, September 4th.

BEECHEY ROGERS, Secretary.

(Appointments continued on p. 84)

British Medical Journal

BRITISH MEDICAL ASSOCIATION HOUSE,
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ASSISTANCIES.

WANTED IMMEDIATELY, MALE, SINGLE, Outdoor ASSISTANT for Glamorgan Colliery Practice. Cottage Hospital. Salary £400 p.a., with rooms and attendance.—Address, No. 5128, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—RESIDENT ASSISTANT MEDICAL OFFICER for a period of twelve months. Salary £350 per annum. Apply for forms of application from the Medical Superintendent, Cheshire Joint Sanatorium, Market Drayton, Salop.

WANTED IN LARGE MIXED PRACTICE (Industrial Town, near Manchester), Outdoor ASSISTANT. Salary £450 increasing to £500 to suitable man. Half Anaesthetic and Midwifery fees. Car allowance. House available. Usual bond.—Address, No. 5258, B.M.A. House, Tavistock Square, W.C.1.

WANTED, IN OR NEAR SOUTHAMPTON, by Woman M.B., Ch.B., experienced General Practitioner, ASSISTANTSHIP or MEDICAL WORK of any kind. Own car and equipment.—Address, No. 5261, B.M.A. House, Tavistock Square, W.C.1.

WANTED, IN SURREY, SUSSEX, OR Hants, by experienced General Practitioner, woman, M.B., Ch.B., ASSISTANTSHIP or other Medical Work. Own car. Free mid-October.—Address, No. 5262, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY. — INDOOR AND Outdoor ASSISTANTS (with and without view to Partnership) and LOCUM TENENTS (male and female) for Town and Country Practices. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

WANTED.—ASSISTANT, OUTDOOR (English, Scotch, or Irish), single, male. Nice Country Town, Cheshire. Salary £360. Use of car in practice. Dispenser kept. Usual bond. —Address, No. 5287, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—AN INDOOR ASSISTANT IN A Colliery Practice for South Wales. Salary £300 p.a.—Address, stating age, references, etc., to No. 5256, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — ASSISTANT, OCTOBER 1ST, single, male, about 30, abstainer, experience G.P. essential, view to Partnership, West London. Salary £300. State age, religion, nationality.—Address, No. 5282, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — INDOOR ASSISTANT, MALE, single, British, for good-class Country Practice, Midlands. No objection to newly qualified. Must own car. Salary about £300, plus car allowance.—Address, No. 5279, B.M.A. House, Tavistock Square, W.C.1.

WANTED BY LONDON CONJOINT GRADUate, aged 32, ASSISTANTSHIP to invalid or retiring practitioner, with view to Partnership or Succession, payable from receipts. Experienced G.P. Lack of capital hindrance.—Address, No. 5277, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY FOR YORK, ASSISTANT with view to Practice of three. Good qualifications and experience essential. House available on lease. Salary £500, and allowance for car.—Address, No. 5302, B.M.A. House, Tavistock Square, W.C.1.

WANTED:—A MALE OR FEMALE ASSISTANT for Practice from 9 a.m. to 3 p.m. only, in London.—Address, No. 5308, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—ASSISTANCE OF A COACH FOR Final L.M.S.S.A. Examination. All subjects to complete in six months. Full particulars.—Address, No. 5303, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANTSHIP IN MIDLANDS WANTED by Woman Doctor, aged 26, M.R.C.S., L.R.C.P., M.B. Two years' hospital and G.P. experience. Good references. Accustomed sole charge. Can drive car. Keen on midwifery, minor surgery, anaesthetics. — Address, No. 5264, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT REQUIRED IN LARGE GENERAL Practice in pleasant Country Town with Hospital. Must have held Hospital appointments. Partnership after reasonable period. Preferably Oxford or Cambridge Graduate or F.R.C.S. Satisfactory terms and car allowance. —Address, No. 5253, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANTSHIP WITH VIEW TO PARTnership wanted by Glasgow Graduate, ex H.S., H.P., and Gynaecological H.S., aged 29. Experienced G.P., private, and panel, midwifery, and anaesthetics. Seaside or country town preferred. Own car. Free end of September. — Address, No. 5272, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANTSHIP WANTED BY MEDICAL Woman, aet. 27, M.B., B.S. Experience panel and private Practice. Ex H.S., H.P., children, and obstetrics. Able drive car. — Address, No. 5260, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT, MALE, SINGLE, UNDER 30, wanted for a country residential Practice within easy reach of Leeds. — Address, with references, to No. 5273, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANTSHIP (OUTDOOR) WANTED BY M.B., Ch.B.Edin. With or without view. Ex H.S. and H.P. Experience in midwifery, E.N.T., and Eyes. Must be in good locality, and preferably in Scotland. Capital available. Free October 1st.—Address, No. 5304, B.M.A. House, Tavistock Square, W.C.1.

INDIAN, L.R.C.P., M.R.C.S., WANTS PRELIMInary ASSISTANTSHIP, definite view, substantial panel Practice, London or suburbs. Worth £1,500 p.a. or so. Capital available.—Address, No. 5076, B.M.A. House, Tavistock Square, W.C.1.

OUTDOOR ASSISTANTSHIP OR MEDICAL MISSION wanted Sept.-Oct. by young lady (British) newly qualified Edinburgh University. Panel or Club Practice.—Address, No. 5257, B.M.A. House, Tavistock Square, W.C.1.

M.D., M.R.C.P.(LOND.), AGED 28, REQUIRES ASSISTANTSHIP, with view to early Partnership or Succession (large Practice London or Home Counties). Well experienced. Many House Appointments. Capital available. —No. 5265, B.M.A. House, Tavistock Sq., W.C.1.

PERMANENT ASSISTANT REQUIRED IN good Surgical Practice; residential area, Univ. town. Salary £450 and free house. Prospects for suitable man. Give fullest particulars, including height, photo, and when available. Interview London, September 8th.—No. 5278, B.M.A. House, Tavistock Sq., W.C.1.

SCOTTISH GRADUATE DESIRES SHORT ASSISTANTSHIP, with definite view, town or rural area. Ten years' busy G.P. Abstainer, industrious, own car. Cash premium.—Address, No. 5079, B.M.A. House, Tavistock Sq., W.C.1.

SURGEON REQUIRED AS ASSISTANT IN large Practice in S.W. England. Partnership after 6—12 months. Must hold F.R.C.S. (Eng. or Ed.) and have good operative experience. Experience in X rays or Ophthalmology an additional recommendation. Salary £500 per annum. Outdoor. — Address, No. 5269, B.M.A. House, Tavistock Square, W.C.1.

WOMAN DOCTOR WISHES TO HEAR OF LIGHT ASSISTANTSHIP in London. Several years' experience G.P., panel and private. Excellent testimonials. Free September. Interview.—Address, No. 5251, B.M.A. House, Tavistock Square, W.C.1.

PARTNERSHIPS.

WANTED. — F.R.C.S.ENG., EXPERIENCED Surgeon and Practitioner, desires PARTNERSHIP or PRACTICE, with scope for Surgery. South or South-West preferred.—Address, No. 5268, B.M.A. House, Tavistock Sq., W.C.1.

WANTED.—PARTNERSHIP OR ASSISTANTSHIP, with early view, in Panel and middle-class Practice, by M.B., B.Ch. Hospital and G.P. experience, also Anaesthetics. Capital available.—Address, No. 5311, B.M.A. House, Tavistock Square, W.C.1.

EXPERIENCED PRACTITIONER WANTS G.P. or PARTNERSHIP, South or West Country. Ample capital. No agents.—Address, No. 5312, B.M.A. House, Tavistock Square, W.C.1.

PARTNER WANTED.—1/2 SHARE IN VERY old-established Practice in health resort. Average receipts about £2,200. Particularly attractive house in best position. Exceptional opportunity for purchaser with higher qualification and small private income. 2½ years' purchase. Give fullest particulars.—Address, No. 3593, B.M.A. House, Tavistock Sq., W.C.1.

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A LADY DISPENSER BOOKKEEPER supplied immediately on request; qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations. — Write, wire, or phone (Bayswater 0969), Secretary, 7, West-bourne Park Road, W.2.

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DOCTORS REQUIRING QUALIFIED Dispensers, Nurse-Dispensers, Secretary-Dispensers, or Chauffeuse-Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 3, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

LADY DISPENSER-BOOKKEEPER (HALL) requires permanent or (long) LOCUM POST with Doctor. Good experience and testimonials. Disengaged beginning of October. Near London preferred.—Address, No. 5271, B.M.A. House, Tavistock Square, W.C.1.

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ORTHOPTIC TREATMENT. — REQUIRED, Lady Doctor to give TUITION in this subject.—Address, with details of qualifications and experience, No. 5071, B.M.A. House, Tavistock Square, W.C.1.

POST-GRADUATE M.B., AET. 33, WISHES PART-TIME WORK, London. Ex H.S., H.P. Eight years G.P. Free from end September.—Address, No. 5301, B.M.A. House, Tavistock Square, W.C.1.

THE ROYAL ARMY MEDICAL CORPS ASSOCIATION, 85, Eccleston Square, S.W.1. (Telephone: Victoria 2722), supplies qualified Dispensers, Book-keepers, Laboratory Assistants, Sanitary Assistants, Male Nurses, Mental and Special Treatment Orderlies, Dental Clerk Orderlies, Porters, Caretakers, etc., without charge to prospective employers.

PRACTICES.

WANTED.—PRACTICE, NICE RESIDENTIAL district, not too far Blackwall Tunnel. —Address, No. 5060, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—PRACTICE. INCOME ABOUT £2,000. Must have good panel. Capital £3,000, plus money for house. Free to negotiate. Please give full particulars in confidence.—Address, No. 5288, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—COUNTRY VILLAGE PRACTICE within 60 miles South of London. £700 upwards. Panel 600 at least. Pre-war house, with good garden, £2,000 approx. Immediate settlement in full.—Address, No. 5284, B.M.A. House, Tavistock Square, W.C.1.

WANTED IN NEW CROSS, LEWISHAM, or other S.E. neighbourhood (but any part of London or suburbs considered) PRACTICE with large panel. Preliminary Assistantship or Partnership with view to success. consid. —No. 5275, B.M.A. House, Tavistock Sq., W.C.1.

COUNTRY PRACTICE (INCLUDING RESIdence) for sale. West Midlands. Unopposed. Fees £3,000 p.a. Panel £1,100. Premium required £4,500. Residence, drugs, and equipment at valuation.—Address, No. 5281, B.M.A. House, Tavistock Square, W.C.1.

COUNTRY PRACTICE, COUNTY GALWAY, I.F.S. Average income £1,000 p.a. House and Practice two years' purchase. House could be leased.—For further particulars apply to T. SUMNER & Co., LTD., Manufacturing Chemists, 40, Hanover Street, Liverpool.

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FOR DISPOSAL.—LARGE MIXED PRACTICE, Industrial Town, near Manchester. Established 52 years. Panel 3,750. Average gross cash receipts past 3 years £4,440. House for sale, 3 entertaining rooms, 5 bedrooms, consulting rooms, dispensary, and wait. room. Practice run with Assistant. Suit two men wishing to Prac. together. Prem. for Prac. 1½ yrs. pur. —No. 5259, B.M.A. House, Tavistock Sq., W.C.1.

FOR SALE.—INCREASING PRIVATE AND Panel PRACTICE of £1,250 in prosperous market town in the Midlands, attractive country and sport available. Excellent detached house and garden for sale. Enclose stamped addressed envelope for particulars and Address, No. 5306, B.M.A. House, Tavistock Square, W.C.1.

FOR SALE. — ESTABLISHED LOCK-UP PRACTICE, London, N.1. Receipts average nearly £300. Very good scope. Rent 13/- (inclusive) per week. Premium £125.—Address, No. 5313, B.M.A. House, Tavistock Square, W.C.1.

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MANCHESTER.—OLD-ESTABLISHED PRACTICE for sale, owner retiring. Good house £77. Receipts over £700. Panel 600, excellent scope. Price £750. — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

M.D., HONS. GRAD., WIDE SURGICAL EXperience, keen worker, capital, requires good mixed PRACTICE or PARTNERSHIP about £1,400 up. Preferably with surgical opportunities. Anywhere but prefers good provincial, seaside, or country town. Well experienced G.P. Confidential.—Address, No. 5057, B.M.A. House, Tavistock Square, W.C.1.

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TO PURCHASERS. — DO NOT BUY without expert assistance. With 50 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

HOUSES, CONSULTING ROOMS.

WANTED.—CONSULTING ROOMS FOR ONE afternoon in the week.—Address, with terms, No. 5309, B.M.A. House, Tavistock Square, W.C.1.

AN OPPORTUNITY OCCURS FOR WELLqualified physician to rent CONSULTING ROOM in first-class professional house in Harley Street district, and take over remunerative part-time appointment. — For full details, Address, No. 4752, B.M.A. House, Tavistock Square, W.C.1.

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EXCELLENT OPENING; NO RESIDENT Doctor; several large villages; beautiful district, W.R. Yorks. Good Modern HOUSE, 2 recep., 5 bed., garage, fine garden. Surgery easily added. Main road. Reasonable price. Owner can leave at once.—Address, No. 5270, B.M.A. House, Tavistock Square, W.C.1.

FOR SALE (BY THE EXECUTORS).—AT THE Junction of five roads in ORCHARD AVENUE, SHIRLEY, CROYDON. A well-built HOUSE, just completed which affords an excellent opportunity to commence practice in a rapidly developing neighbourhood.—Particulars from Messrs. KILLICK & KNIGHT, West Wickham, Kent. 'Phone: Springpark 1720.

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GOOD OPENING FOR DOCTOR AND FOR Dentist in growing district. Suitable FREEHOLD HOUSE available, price £600.—Apply for particulars to A. H. MAY, Tarpots Corner, Thundersley, Essex.

HARLEY STREET DISTRICT. — LARGE handsome CONSULTING ROOM, completely equipped with all requisites for medical or surgical consultant. Available part-time. £50 per annum. — Address, No. 4755, B.M.A. House, Tavistock Square, W.C.1.

HARLEY STREET.—WHOLE OR PART-TIME CONSULTING ROOMS. Comfortably furnished. Reasonable inclusive rental. single bedroom. Suitable professional man week-ends.—Address, No. 5263, B.M. Tavistock Square, W.C.1.

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NUCLEUS. — LONDON SUBURBS. — NEW building estate. Ample scope. House suitable for small nursing home. No premium.—Address, No. 5055, B.M.A. House, Tavistock Square, W.C.1.

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PREMISES IN HAMPSTEAD, PRE-EMINENTLY suitable for consulting room, etc., now available at moderate rental. Situated in new building in growing district, where 400 or more good-class families will shortly take up residence. Immediate application is advisable. —Please write for particulars to: BELL PROPERTY TRUST LTD., 115, Park Street, Mayfair, W.1.

PART-TIME CONSULTING ROOM IN QUEEN Anne Street to Let. £50 a year.—Address, No. 5305, B.M.A. House, Tavistock Square, W.C.1.

SOUTH AFRICA.—ENGLISH HOMESTEAD ON high veldt TO LET for six months; exceptionally well furnished; electric light; modern drainage; telephone; doctor; five bedrooms, two bathrooms; usual offices; garage; swimming bath; tennis court; croquet lawn. Nine-hole golf course one mile away. Riding Station on main line 1½ miles. Native servants can be arranged for. Farm manager available to help in any way.—Photos. and further information from HELME, 10, Scroope Terrace, Cambridge.

SOUTH CROYDON, SUITABLE FOR VISITING Consultant, Optical, Dental, Aural, etc., ACCOMMODATION TO LET in best part of this area.—For particulars apply to "H. P.," 4, Birdhurst Rise, South Croydon.

WHEN YOU COME TO LONDON STAY AT THE HAMPDEN RESIDENTIAL CLUB FOR GENTLEMEN, Hampden Street, N.W.1. Close King's Cross and Euston. 300 bedrooms; 12/6—25/- p.w., includ. baths, attend., & boot cleaning. All meals à la carte in dining room. Mod. tariff. Large club rms., reading rm., study for students. Illus. prosp., Sec. Euston 2244/5.

APPOINTMENTS.—Contd.

PRINCESS ELIZABETH OF YORK HOSPITAL FOR CHILDREN, Shadwell, London, E.1. (Formerly East London Hospital for Children.) (135 Beds).

The following Medical Officers are required on October 1st:

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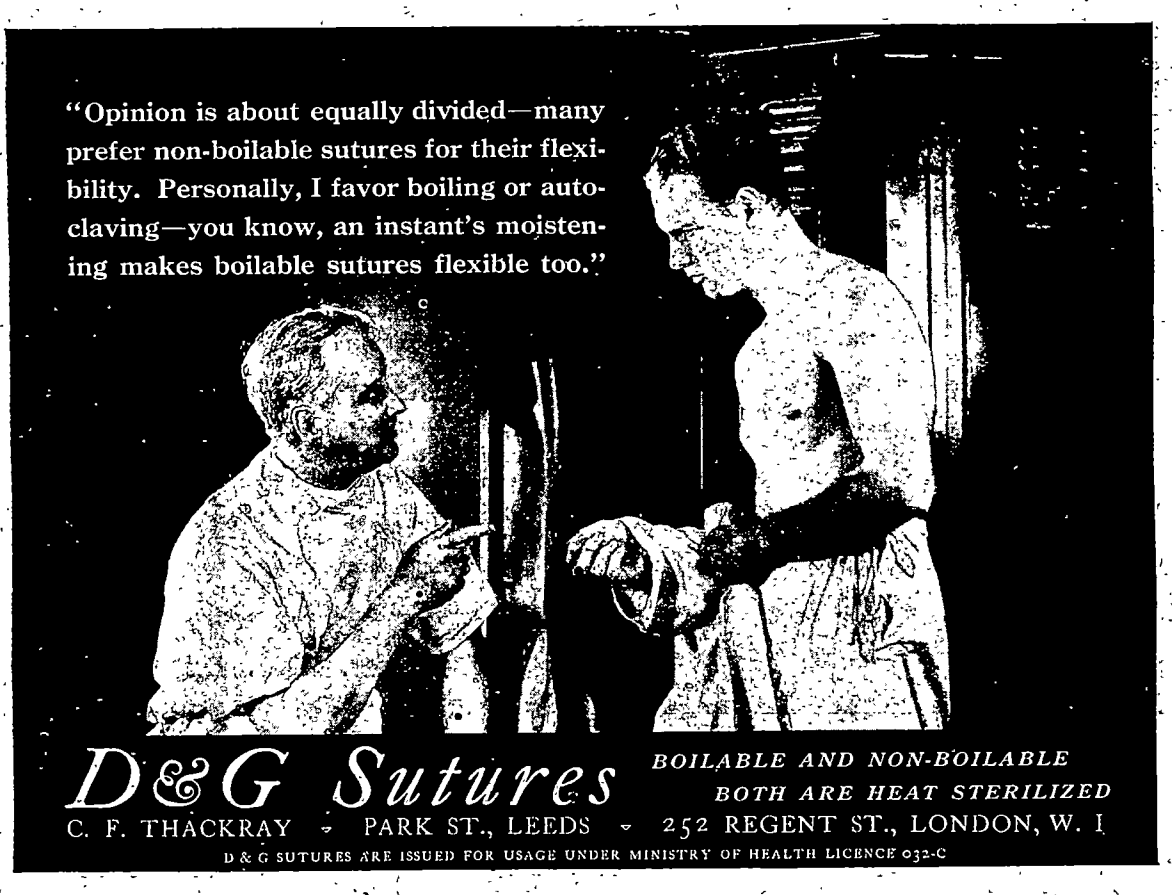

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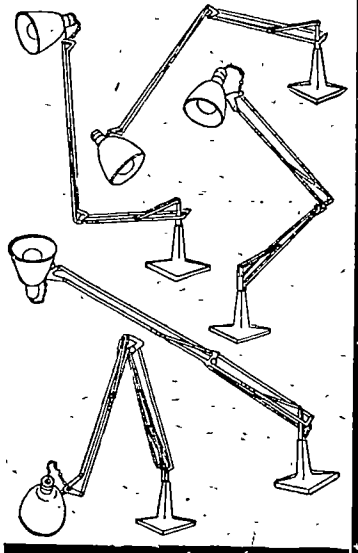

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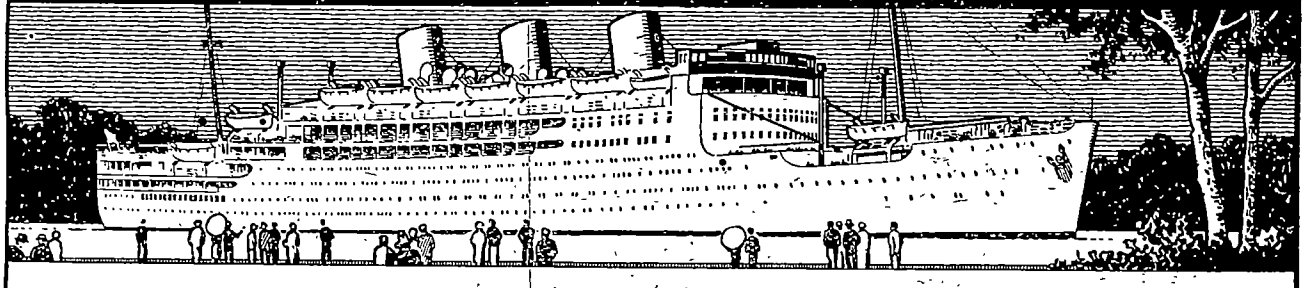

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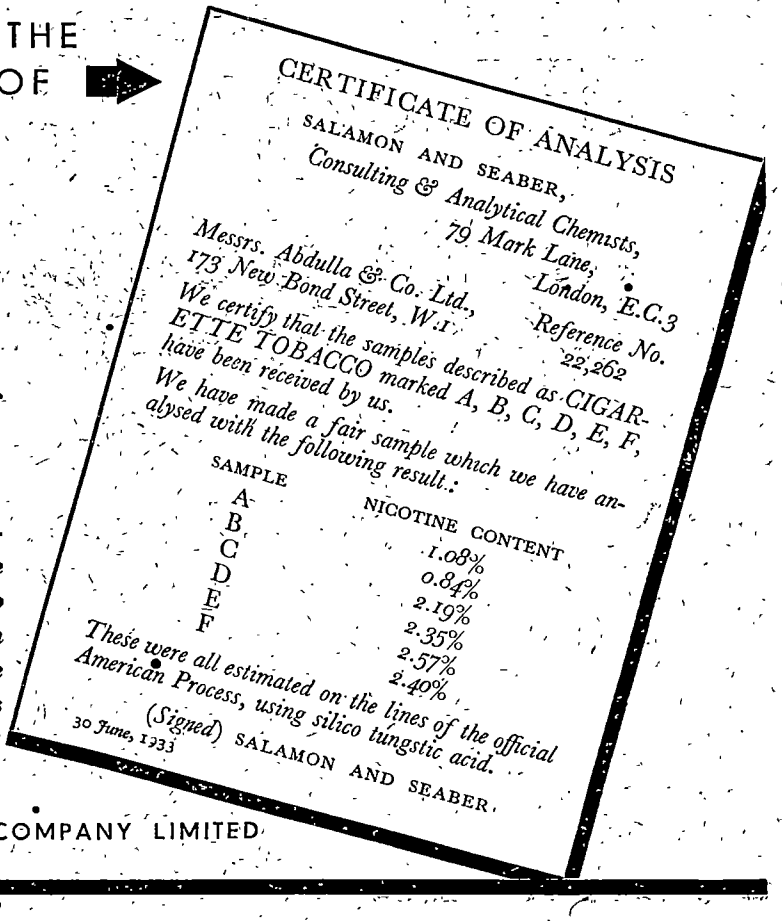

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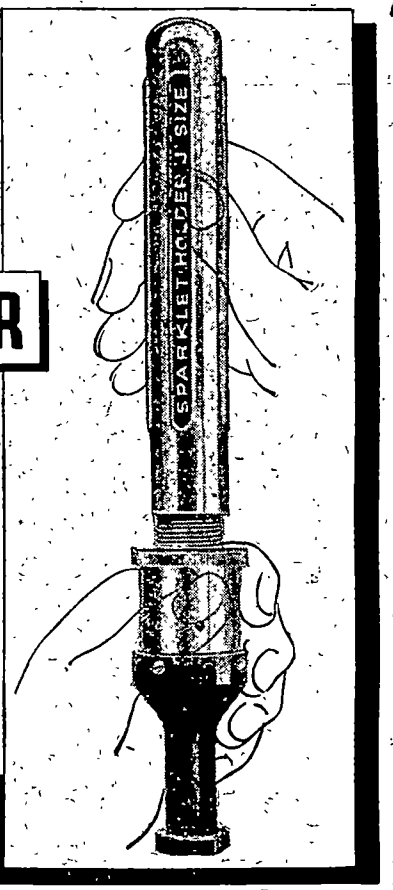

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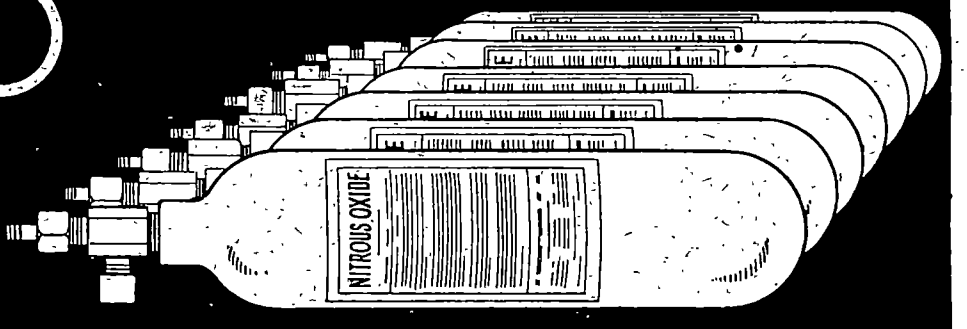

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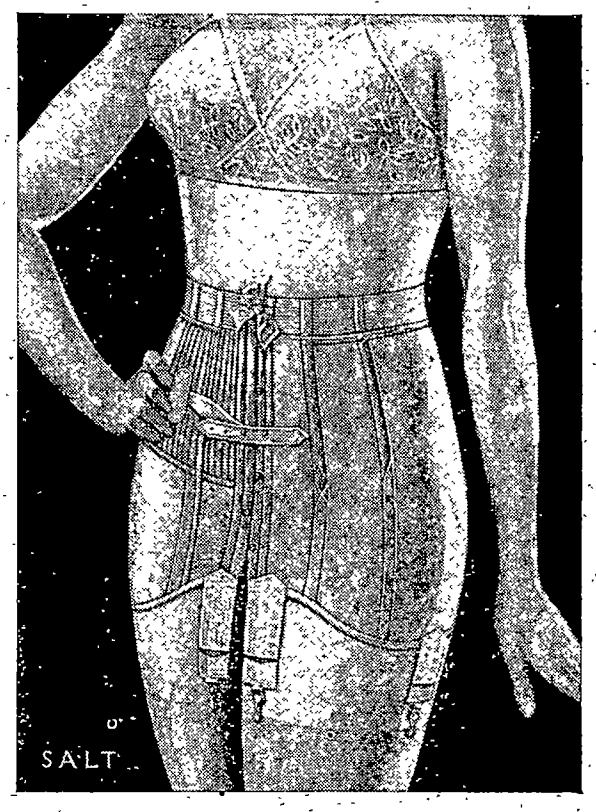

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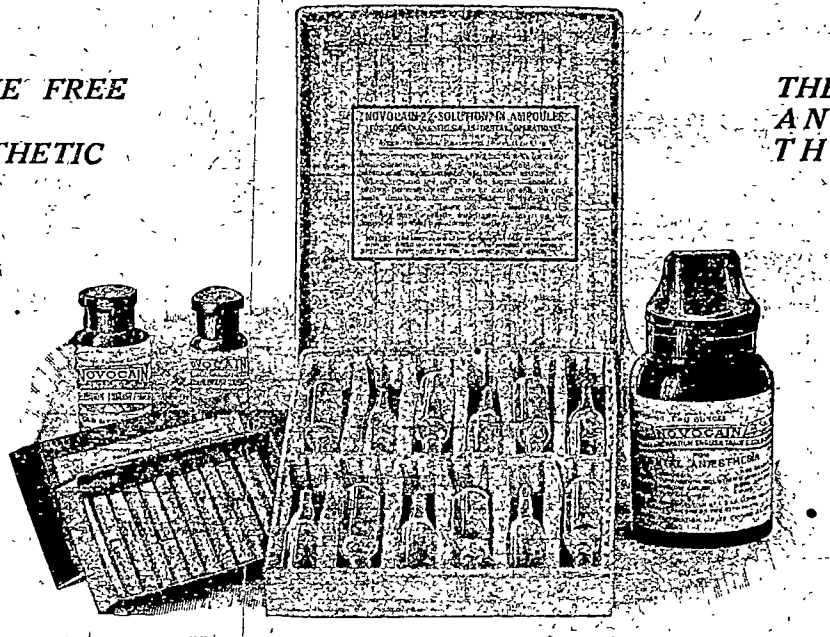

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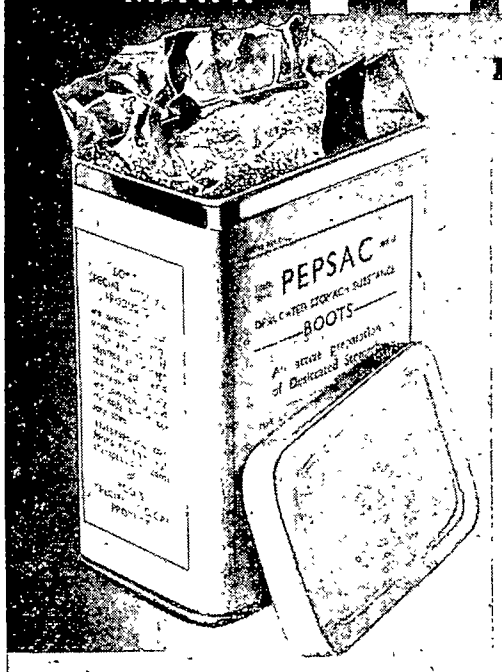

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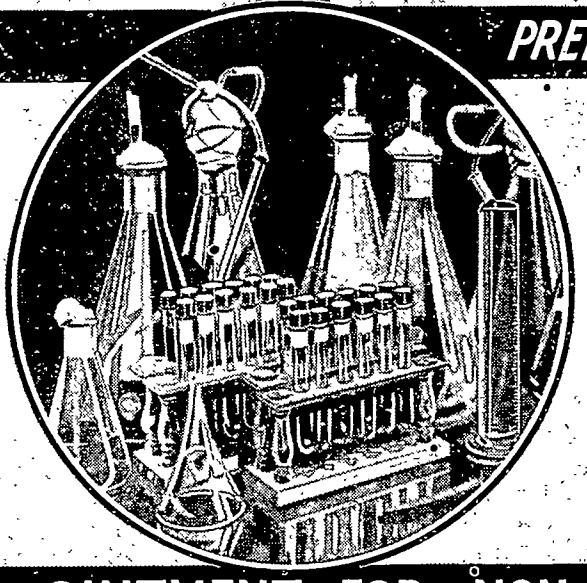

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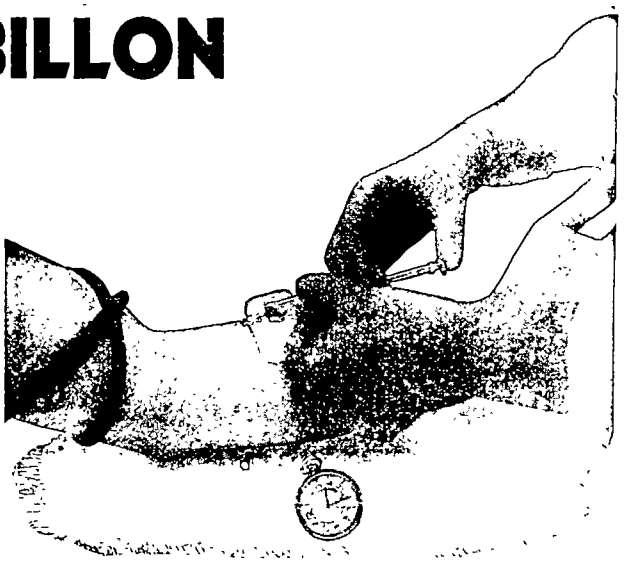

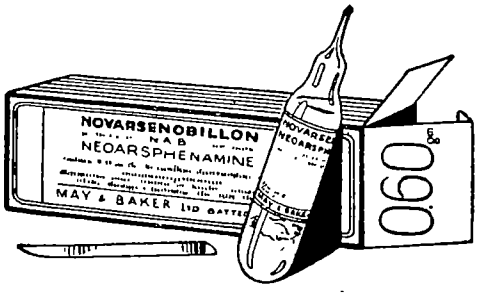

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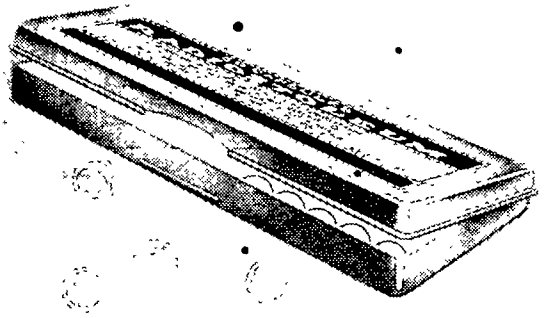

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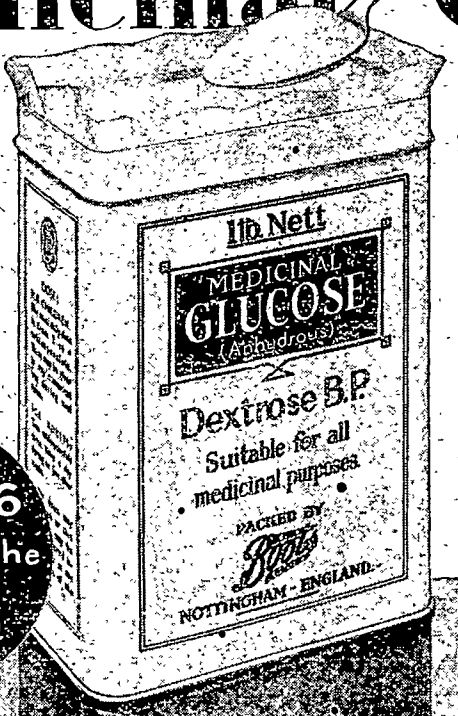

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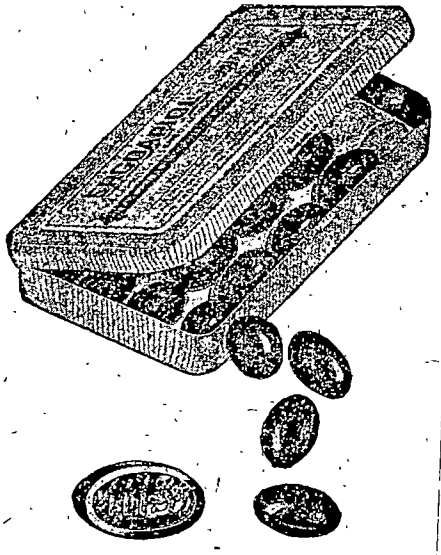

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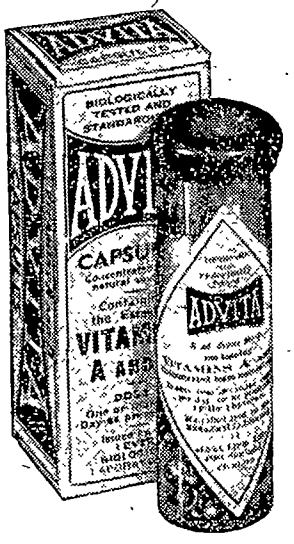

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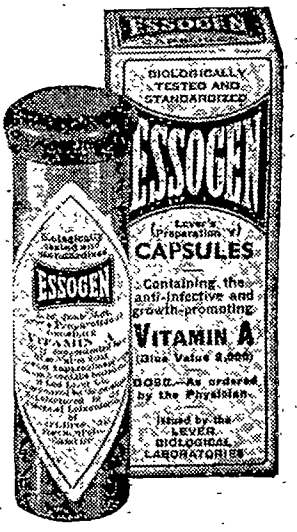

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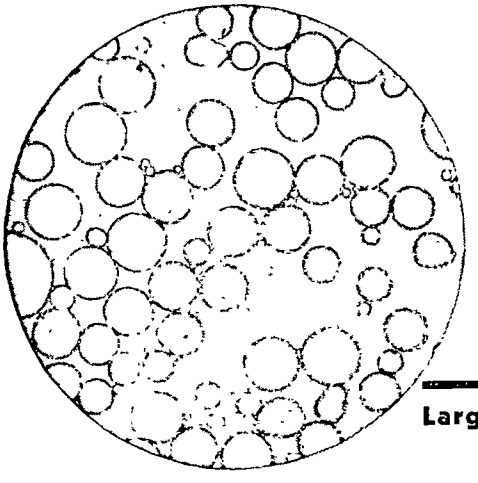

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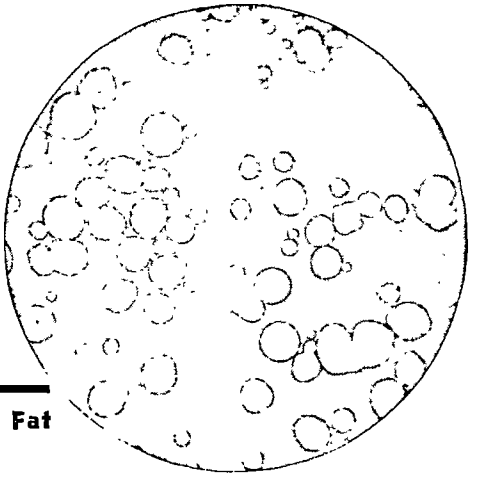

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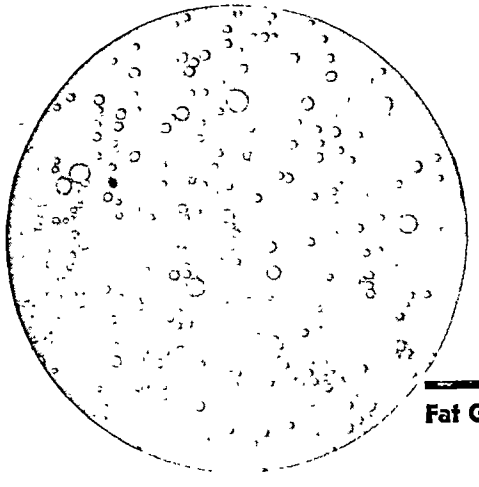

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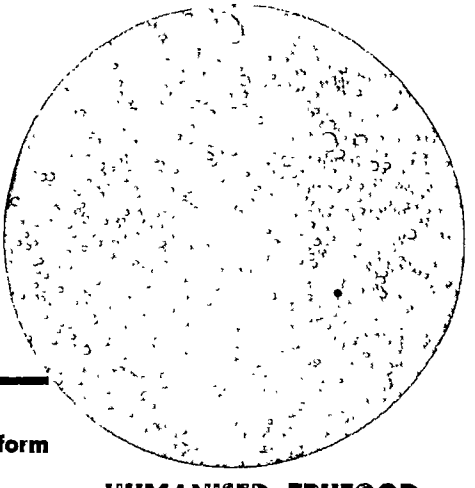

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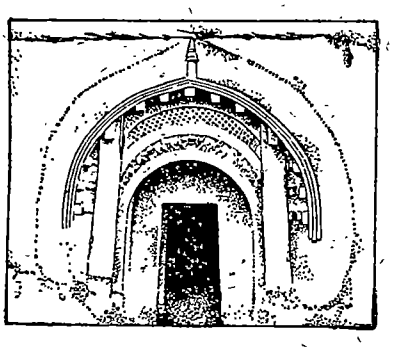

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From c. 1300 B.C.
The architectural treatment of the Cave, c. 257 B.C.

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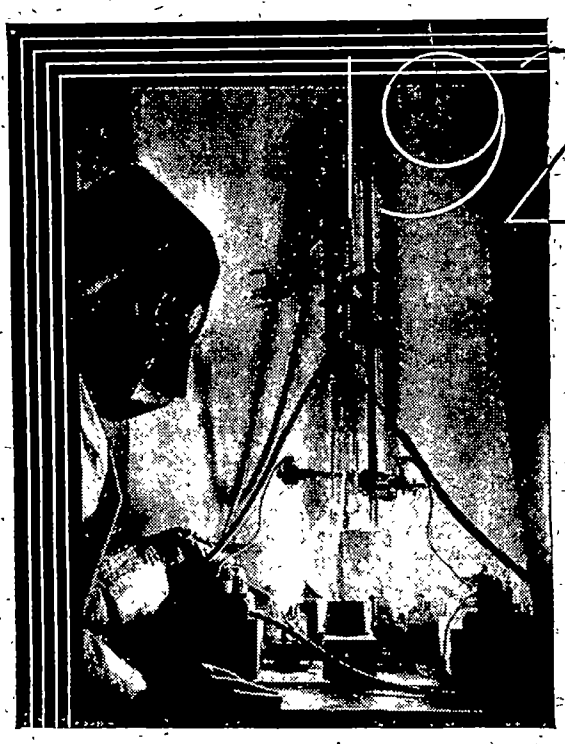

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GL 103

BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, SEPTEMBER 8th, 1934

B. COLI INFECTIONS: AETIOLOGY AND TREATMENT*

BY

D. M. LYON, M.D., D.Sc., F.R.C.P.Ed.

PHYSICIAN TO THE ROYAL INFIRMARY, EDINBURGH; PROFESSOR OF THERAPEUTICS AND CLINICAL MEDICINE IN THE UNIVERSITY OF EDINBURGH.

The colon bacillus in the healthy individual is a harmless saprophyte, which possibly assists in the later stages of digestion. Under certain conditions it seems to be the organism responsible for infections in almost any part of the body. Inflammatory lesions in or adjacent to the alimentary canal are often due to this organism, and apart from these the sites most frequently affected are the urinary tract and the gall-bladder. In all cases the original source of the infection is doubtless the bowel, and much inquiry has been directed to the methods of spread to the secondary sites. The organism grows most freely in the caecum and ascending colon, where the contents of the bowel are still fluid, but the drier conditions in the lower colon are less favourable to it, and many die off. Some bacilli also exist in the lower ileum, though never in great numbers unless stasis be present. The neighbourhood of the duodenum is usually sterile. It was long believed that the healthy intestinal mucosa offered an effective barrier to the passage of organisms from the bowel. This does not seem to be strictly true, for several workers have confirmed the observation of Adami[1] that organisms may penetrate the wall of the bowel without causing any lesion during their passage. Doubtless lymphatic glands and liver serve as additional lines of defence. Warren and Whipple,[2] by *x*-ray application, destroyed the epithelium over large areas of the small intestine, and found that no massive invasion took place, though some organisms reached the neighbouring glands. Recent opinion suggests that a few organisms are constantly leaving the bowel, to be rendered harmless in the body.[3]

Infection of the Urinary Tract

There has been much controversy concerning the path by which colon bacilli may reach the urinary tract, but neither clinical nor experimental evidence is sufficient to give a conclusive answer. It is possible that under suitable conditions the organisms may pass by any of the paths suggested. Spread may occur by natural passages, by lymphatics, by the blood stream, or by a combination of these. At several points the alimentary canal and the renal system lie in close contact, separated only by a little connective tissue, and direct penetration may take place. In such situations lymphatic plexuses may offer a more ready path. There may also be invasion of the portal veins or of the general circulation by way of the thoracic duct. Ascending infection in the urinary tract is believed to occur along the lymphatics which surround the ureter. In females there may be direct spread across the perineum to the lower urethra, but upward extension along the lumen is usually considered unlikely, even when gross obstruction exists.[4] That urinary infection occurs more frequently in female infants at the diaper stage has been held to favour passage spread, but Nabarro[5] has drawn attention to certain fallacies, and in any case the lesion appears most commonly in the right kidney before the bladder is involved. Most writers now seem to prefer the theory of blood spread to the kidney. If this be so, organisms circulating in the blood stream should reach other parts of the body, and should affect both kidneys equally, yet the right is involved much more frequently than the left. This theory also fails to explain why women are more liable to pyelitis than men.

Much experimental work has been done in trying to elucidate the problem. The feeding of large quantities of foreign *B. coli* to dogs resulted in the appearance of some organisms in distant tissues, and in the urine in three cases out of four.[6] Direct injections into the blood stream have given information of rather negative value. The healthy circulation appears to possess an enormous protective capacity, for even when billions of organisms are introduced into a vein urinary infection may fail entirely,[7] and the blood may be sterile within an hour.[8] In similar experiments Book found that bacteria did not appear in the urine for many hours, and then only if local foci had been developed in the kidneys.[9]

Peritoneal injection of large quantities of *B. coli* culture result in a rapid appearance of the organisms in the blood stream,[10] and some can be recovered from the urine within half an hour.[11] Thiele and Embleton[11] describe some interesting observations. They painted organisms in the anterior urethra of guinea-pigs, and found that they were rapidly conveyed by lymphatics to the capsule of the kidney and then by lymphatic paths to the general circulation. None were carried directly to the bladder. Reinfection of the body appears to occur readily from the urinary tract. Barrington and Wright[8] investigated the blood before and after minor operations on the urethra. In a large percentage of cases slight trauma to the mucosa was followed by the arrival of organisms in the blood within a few minutes. The bacilli disappeared within half an hour.

Many observers have shown that the colon bacillus does not readily establish itself in the blood stream or in the urine in healthy animals. It would seem that factors other than the mere presence of the organisms are necessary for a lasting implantation.

Age and Sex Incidence

B. coli infections of the urinary tract may develop at any level from a urethritis to pyelonephritis and perinephric abscess. Pyelitis is probably the commonest

* Read in opening a discussion in the Section of Medicine at the Annual Meeting of the British Medical Association, Bournemouth, 1934.

lesion, while others are so mild as to suggest a bacilluria. Some writers consider these terms unjustified, and believe that there is always some underlying invasion of the kidney substance[12 26]; it should be remembered, of course, that only the more severe cases are examined by the pathologist. Urinary infections occur at any age, and are more frequent in females, both infants and adults. In males they are seldom found unless some obstruction is already present. When lesions affect different levels of the urinary tract the kidney is usually involved earlier than the bladder. Debilitating conditions, the presence of other disease, exposure to cold, fatigue, overexertion, starvation, undernutrition, and addiction to alcohol and drugs will undoubtedly favour infection by lowering resistance. These may affect either the bowel or the urinary tract.

Many practitioners have considered constipation and intestinal stasis important factors, but proof is difficult because of the frequent occurrence of these. Colitis, ulceration, diarrhoea, and the abuse of purgatives are equally important. Walker[4] has proposed that a dose of cascara should be given to test whether a case of bacilluria has been completely cured. Such a dose will result in a reappearance of organisms in the urine if health has not been restored. No claim has been put forward that foreign bacteria in the bowel are more likely to gain entrance to the body. In the urinary tract the most important factor seems to be the presence of some obstructive lesion which interferes with free drainage. Experimentally this is also true, though the lesion may be very slight; obstruction of the urethra for as short a time as fifteen minutes may enable an infection to occur.[13] In men enlarged prostate, stricture, and calculus favour infection, also nerve lesions such as tabes. Enforced rest after an operation, and unduly long retention of urine from any cause, are also said to be of importance. Mechanical causes, such as prolapse and external pressure, act in the same way. Pyelitis is common about the middle of pregnancy, and this may depend on the dilatation of the right renal pelvis, which is almost constant in this condition.[4] The presence of foci in the gall-bladder or appendix may keep up a bacilluria.

Gall-bladder Infection

Infection of the gall-bladder may take place in much the same way as in the case of the urinary tract. Organisms may reach the liver by the systemic or the portal blood vessels, by lymphatics, and by the common bile duct. The bile, though alkaline, is an excellent culture medium for the colon bacillus and similar organisms. Typhoid bacilli are believed to reach the liver by the blood stream, and colon bacilli may arrive by the same path. Hurst[14] has pointed out that where achlorhydria is present the contents of the duodenum are more alkaline—a condition favouring the growth of organisms—and retrograde infection of the biliary system is more likely in such cases. He also states that laparotomy, when followed by complete inhibition of gastric secretion and movement for a time, will allow *B. coli* to appear in the stomach within twenty-four hours.

In the gall-bladder the bacilli attack the walls, and so form a focus from which the bile can be constantly reinfected. As in the case of the urinary tract, the mere presence of organisms in the biliary system is probably not the only factor. Williams and McLachlan, studying the bacteriology of the gall-bladder, formed the impression that the *B. coli* and streptococci which were found were secondary invaders, enabled to settle down because of some toxic or chemical injury to the parts.[15] The presence of gall-stones favours infection, and these depend to some extent on the occurrence of a high blood cholesterol, though bacteria may also play a part in their formation. Anatomical abnormalities and mechanical faults leading to stasis or defective drainage of the gall-bladder are also of importance. Again, the presence of other foci of infection may predispose. Hurst reports that 37 per cent. of cases of cholecystitis had appendix scars.[14]

Septicaemia

Despite the apparent ease with which intestinal organisms invade the blood stream, true *B. coli* septicaemia is comparatively rare. Experiments already quoted have shown that even after massive infection the organisms fail to maintain themselves in the circulation. On the other hand, transient bacteriaemia is probably very much more common than is usually supposed. Barrington and Wright have shown that organisms frequently reach the blood from the urethra if the urine is already infected[8]; Baird, who investigated the blood after labour, found coliform organisms within a few minutes of delivery, though they rapidly disappeared after an hour.[16] He also draws attention to the danger of urinary infection in the puerperium from inability to pass water for some hours post partum.

As in the case of the local lesions, other factors appear to be essential for the development of septicaemia. It has been suggested that many cases of *B. coli* septicaemia may really be the overflow of bacteria from some local focus, such as the appendix or gall-bladder.

Treatment of B. coli Infections

A knowledge of the factors which permit an invasion of the body by the colon bacillus suggests measures which may be taken to prevent the infection: avoidance of debilitating and exhausting conditions, and the correction of all lesions which interfere with free drainage in the urinary and biliary systems. As the bowel is undoubtedly the original source of all infections, special attention should be directed to its proper functioning. Constipation must be corrected, but, in dealing with this, drastic purgatives must be avoided, as these carry fluid contents and more active organisms to the lower colon, and it has been shown that this may cause an exacerbation of the distant infection.[4] Diarrhoea must be controlled, and other lesions of the bowel should be attended to.

The importance of such conditions is beyond doubt, but there may be other less obvious factors which favour invasion of the body. Colon bacilli isolated from distant lesions are usually of the same types as are commonly present in the alimentary canal, and it has not been held that foreign strains are more prone to cause infections. The importance of increased numbers of active *B. coli* in the small intestine or in the distal colon is more difficult to assess. In health the proportion of the various groups of organisms in the faeces is practically constant,[17] but in certain conditions the stools may show an unusual preponderance of one or other type. Recognition of such abnormalities would warrant an attempt to correct them.

The so-called intestinal antiseptics are probably of little assistance, for in doses which are safe they cannot possibly sterilize the gut, and little is known of their effect on the various kinds of bacteria. Calomel in non-purgative doses is probably as useful a drug as any, and sulphur may also be of service. Many practitioners rely on preparations of liquid paraffin and agar for keeping the bowel in order. High colon lavage may be employed to get the lower bowel into a healthy state. An attempt may be made to alter the intestinal flora by implanting *B. acidophilus* and by giving lactose. Whole-wheat bread, uncooked starches—such as oatmeal—and sour meal preparations have been proposed for the same purpose.[3 18] There

affect the frequency of urinary infections. Changes in nursing personnel, for instance, made no difference to the proportion of urinary infections, and the incidence was approximately the same in each ward of the hospital. It was natural to look into this question because the women patients were all catheterized by sisters and senior nurses. Retention in men patients was relieved by an indwelling catheter with an antiseptic seal,[1] and the fact that only a small proportion of the men patients became infected is a tribute to the good quality of the nursing at St. Mark's Hospital. If less care had been taken with the sterilization and passage of catheters there would no doubt have been a higher proportion of infection. Similarly, it was found that the incidence of infection was approximately the same in the practice of each of the six surgeons on the staff of the hospital, and did not vary in the three operations commonly performed for cancer of the rectum—namely, perineal, abdomino-perineal, and perineo-abdominal excision.

It was also interesting to notice that minor defects in renal function, such as are accompanied by a rise in the blood urea to 50 or 60 mg. or a fall in the van Slyke urea clearance test to 40 or 50 per cent. did not predispose to urinary infection: there was no greater frequency of infection in the group showing these defects compared with other patients whose renal function tests before operation were more satisfactory. More severe defects in renal function would probably have predisposed to urinary infection, but such cases were not accepted as operable.

Causative Factors

Turning to the factors which influence the frequency of urinary infections, much the most obvious is sex. Infections following post-operative retention are much commoner in women than in men. In the whole series

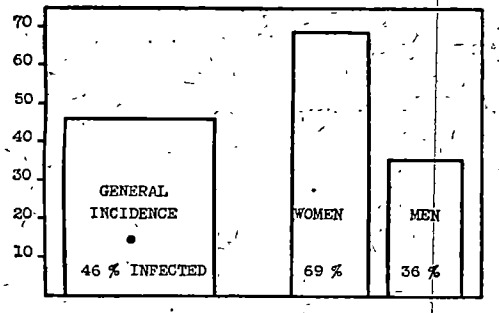

FIG. 1.—Infection following post-operative retention of urine. Incidence in each sex.

of 214 patients, *B. coli* infection developed in ninety-nine (46 per cent.). Infection occurred in forty-seven out of sixty-eight women (69 per cent.), but in only fifty-two out of 146 men (36 per cent.) (see Fig. 1). This higher incidence of infection in women is not unexpected when one considers the difficulty of catheterization in a woman helpless after an extensive pelvic operation. In these circumstances the urine generally becomes infected within twenty-four hours of the commencement of catheterization, and pyuria supervenes two or three days later. In men patients, drained by a self-retaining catheter with an antiseptic seal, it is possible to keep the urine sterile and free from pus for several days. Thus, during the last few years nearly 100 men patients have had a catheter tied in for three to six days without any infection other than a slight urethritis.

Next to sex the most important factor predisposing to urinary infection is old age. The risk of infection increases steadily with advancing years both in women and in men. Of the women under 60 only 62 per cent. became infected after post-operative retention, but in those over 60, 86 per cent. developed *B. coli* infections. Similarly with the men—only 28 per cent. of those under 60 became infected, compared with 47 per cent. of those over this age (Fig. 2). This increased frequency of urinary infections in elderly subjects is attributable in women patients chiefly to loss of muscle tone, and in men to the increasing incidence of prostatic disease. Both these influences result in a longer period of retention, and as a general rule the longer the period of retention the greater the risk of infection.[2]

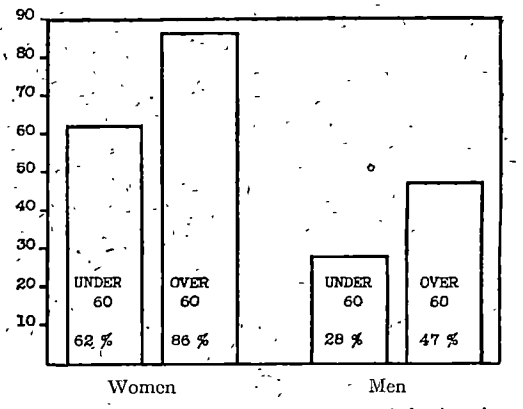

FIG. 2.—Influence of age in liability to infection in post-operative retention of urine.

The relation of the period of retention to likelihood of infection is shown by the fact that in men who suffered from retention for more than three days 38 per cent. became infected, but only 15 per cent. of infections occurred among those whose retention lasted a shorter

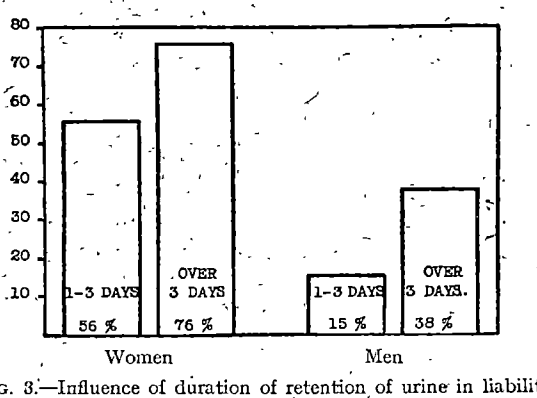

FIG. 3.—Influence of duration of retention of urine in liability to infection.

period. Similarly with the women—infections occurred in 76 per cent. of those requiring catheterization for more than three days, and in only 56 per cent. of those with retention lasting less than three days (Fig. 3).

Discussion

Finally, it is possible to show from this analysis that the patient's general state of health is an important factor in the incidence of urinary infection after post-operative retention. All the patients on whom these observations have been made had undergone the operation of excision of the rectum for cancer. In the early stages of this disease the general health is not impaired, but when the growth has ulcerated extensively and commenced to invade the extrarectal tissues there is a serious decline in the patient's general condition. Early cases are thus in a much better state of health at the time of operation than late cases. The lowered vitality is reflected in the increased incidence of generalized sepsis, and the higher operative mortality rate in the "C" group of cases, in which the glands contain metastases.[3,4]

The influence of the stage of the cancer on the risk of urinary infection is shown by the fact that among women 77 per cent. of the late cases became infected and only 59 per cent. of the early cases. Similarly, among men infections occurred in 42 per cent. of the late cases and in only 32 per cent. of the early cases (Fig. 4). The average age in each group was approximately the same, and it seems justifiable to attribute the increased incidence of urinary infection in the more advanced cases of cancer to a decline in general health.

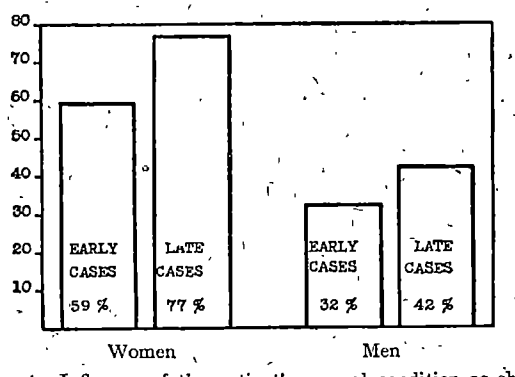

FIG. 4.—Influence of the patient's general condition as shown by the frequency of post-operative urinary infections in early and late cases of cancer of the rectum.

These four factors—sex, age, duration of retention, and general health—are each responsible for considerable variation from the average in the incidence of *B. coli* infections after post-operative retention. The last three are to some extent dependent on each other, the duration of the retention being related to the age group and also to the patient's general state of health. Moreover, although for descriptive purposes these four factors have been considered separately, it must be pointed out, in conclusion, that they all predispose to infection because of their influence on the functional activity of the bladder. From the point of view of the subject under discussion their main interest lies in the fact that they exemplify a principle, familiar in urinary pathology but not always so easy to demonstrate in detail, that urinary infections are often dependent on defective function of the urinary organs.

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The creation of new slum areas by smoke-polluted atmosphere is to receive special consideration at the annual conference of the National Smoke Abatement Society, which will be held at Glasgow from September 27th to 29th. Dr. J. Johnstone Jervis, medical officer of health for Leeds, will be the chief speaker on the subject of slum clearance and smoke prevention. Dr. J. S. Owens, who is in charge of the investigations into atmospheric pollution on behalf of the Department of Scientific and Industrial Research, and has invented many of the delicate instruments used for the measurement of atmospheric pollution, is to describe the latest developments in this direction. New instruments for the measurement of smoke emission will also be demonstrated. Special consideration is to be given to the effects of smoke upon visibility and aviation, and upon horticulture. The delegates will be given a civic reception by the Lord Provost in the City Chambers, and the discussions will take place in the Council Hall. The chairmen at the various sessions will include Dr. H. A. Des Vœux, president of the society, and Dr. John R. Currie, professor of public health at Glasgow University.

THE VALUE OF RADIOLOGY (DIAGNOSIS AND TREATMENT) AS AN AID TO THE GENERAL PRACTITIONER*

BY

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The three specialties—surgery, radiology, and pathology—have both a technical and a medical side, and have had eminent exponents of one or both aspects. Radiology occupies a position midway between the other two: it is in many ways ancillary, as pathology and bacteriology are (from the practitioner's point of view), while in other ways it is more independent, as the surgical specialties are. Again, the radiologist can rarely diagnose or treat "at a distance," as is the custom of the pathologist and the bacteriologist. The presence of the patient is usually as essential to him as it is to the surgeon. Radiology is therefore more a clinical specialty than a laboratory specialty.

Some of the more outstanding pioneers in the subject have been better known as biologists than as technicians. Some years ago Sir John Bland-Sutton, in speaking of members of his own craft, drew attention to this distinction, and few will deny that radiologists will be more likely to rise high in scientific reputation and in usefulness to their colleagues and the community when they regard themselves primarily as physicians—physicians who practise in radiology—than when they consider themselves only, or essentially, as technicians. In so far as they take their proper place as medical consultants rather than as technical consultants they will face far greater difficulties, and will have many opportunities, too, for exercising tact, both with patients and with their colleagues, but their value and general usefulness will in time be much greater.

Value of a Diagnostic or Therapeutic Method

The value of a diagnostic method is established by its affording evidence which can throw new light on obscure clinical problems, and still more when it can afford signs of such high value as evidence that they can be called pathognomonic. Radiology, it has been said with much truth, has brought forward a far greater number of such pathognomonic signs in its short existence than all the previous centuries of clinical observation could accumulate. In ancient medicine, and well on into the Middle Ages, physicians found, as they thought, infallible diagnostic and prognostic signs in astrological calculations or "images" (Chaucer): the position of the stars at the time of onset of the illness was generally agreed to be pathognomonic. Magic in diagnosis is less popular now, but in treatment, radium—to the public at large, and even to some members of the profession—has undoubtedly magical properties. The more scientific and less magical bases of diagnosis and prognosis began early in clinical observation, and later on progressed as the study of physical signs grew in accuracy. Thus in auscultation as a method we have relative and absolute examples of value in the discovery of a mitral systolic murmur, which can have one of many different interpretations, as compared with that of the presystolic murmur of mitral stenosis (crescendo, and heard supine). While some radiological authorities, such as Köhler, regard the value of radiological diagnostic evidence as always relative and quite secondary to clinical findings, I rather agree with

* Read in opening a discussion in the Section of Radiology and Electrotherapeutics at the Annual Meeting of the British Medical Association, Bournemouth, 1934.

those others, such as Holzknecht, who consider many roentgenological signs as pathognomonic, or more nearly absolute in value.

A long list of useful and pathognomonic signs could be given, but a few instances may suffice: a timely chest examination, which may reveal early tuberculosis masked as influenza, or miliary tuberculosis masked as enteric; bronchiectatic cavities made evident with lipiodol injection; horizontal fluid levels found in lung abscesses, or in gastro-intestinal diverticula, small bowel obstruction, or sinusitis; the demonstration of early aortic aneurysm, or of early heart enlargement; in the gastro-intestinal tract, the unequivocal signs of ulcer or growth, or of such conditions as diverticulitis and polyposis; again, in the examination of the gall-bladder, kidneys, nervous system, and bones and joints there are a great many signs which can well be called pathognomonic.

The value of a therapeutic method is established when it can relieve and possibly cure more "quickly, safely, and pleasantly" than any other method some or many groups of diseased conditions, and still more when it can show a specific curative action on malign processes which are otherwise intractable. In dermatology, gynaecology, and in almost all the other branches of medicine and surgery, the advances in radiotherapy have been immense; and in many fields, such as inflammatory infections, new discoveries are being made almost yearly—as, for instance, the possible value of treatment of pneumonia by short-wave diathermy, and the *x*-ray treatment of acute and subacute sinusitis and mastoiditis.

By all tests, diagnostic and therapeutic, radiology stands high. In diagnosis it has thrown a flood of light into most of the branches of medicine and surgery, and of its success in therapeutics the same may be said. Thus, apart from the knife or cautery (or to a much less degree foreign proteins and metals), *x* rays and radium are the only agents known to have an influence on malignant growth. This is the unique achievement of radiotherapy.

Good and Bad Radiology

The first criterion of the value of radiology must be that it is *good* radiology, as estimated by the higher current standards of excellence. Radiology is not nearly so established a science yet as pathology or surgery, with the result that there has been in the past, and still is, far too much imperfect radiology in all its branches—diagnostic and therapeutic *x* rays and radium therapy.

As an instance of diagnostic error we may recall the fact that hundreds of recruits for the armies of Great Britain and America were wrongly rejected because of the confident radiological diagnosis of "peribronchial phthisis." The boundaries of the normal and pathological in chest radiographs were not nearly so well established twenty years ago as they are to-day, and many radiologists in the war followed pseudo-scientific dogmas which some had laid down, based on false views of chest pathology. From time to time one still hears of extraordinary instances of wrong interpretations of radiographs. There was the recent case of an eminent foreign doctor who spent many months in bed owing to a wrong *x*-ray diagnosis of "spinal disease" which had been made by a surgeon. Again I may instance a patient who came home from a far-distant colony because of the wrong interpretation of his spasmodic "cascade stomach." He had returned expecting to have a gastric operation, but surgical intervention was shown to be quite unnecessary. Similar and more tragic instances of wrong *x*-ray and radium treatment are not infrequent, as are instances of failure to apply these agents when indicated.

Radiology: Major and Minor

The problems of correct interpretation in diagnostic radiology are so great, and the subject is still so far from fully explored, that Haenisch of Hamburg, for example, in a recent address in America on "Radiology as a Specialty," held that there is (and can be) no "minor roentgenology" corresponding to "minor surgery" or "minor pathology." I doubt, however, whether this position will meet with general agreement. Surely almost all fractures and dislocations, many foreign body localizations, and much of the fields of elementary thoracic and genito-urinary diagnosis can be held to be "minor roentgenology." If we admit no "minor" roentgenology how shall we prevent technical assistants, radiographers, or general practitioners from practising radiology to a greater or less degree? Granted that interpretation is a medical prerogative, it seems to me that technical and elementary diagnostic radiology cannot be restricted to medical specialists in the subject. In the spheres of electrotherapy and actinotherapy much may be said to be "minor," and can well be delegated to qualified biophysical assistants or technicians. On the other hand, in the sphere of radiotherapeutics (*x*-ray and radium therapy), little can be said to be "minor radiotherapy," except perhaps some of its dermatological applications.

Lay unqualified practice in radiology should be forbidden by law, just as the prescription and administration of poisons is legally restricted. An American doctor has reported recently a large number of cases of severe gum and jaw damage resulting from *x*-ray treatment for hypertrichosis administered in beauty parlours.

Radiology as a Specialty: Education

While a new medical science is emerging from the general body of medicine it first proves itself of value to medical and surgical specialists; only later on, when it becomes a consolidated science and art, does it make a wider appeal, reaching the general practitioner and the public. Radiological work is highly appreciated already by our specialist colleagues in medicine and surgery, for the statistics of all radiology departments show that year by year they refer a greater proportion of their hospital patients to us both for diagnosis and for treatment. Radiology has recently been accorded official recognition as a specialty by the institution, by some of the universities and colleges, of diplomas in this science and by insistence on a course of study in the subject by medical students—the general practitioners of the future. For graduate study with a view to specialism a three-years' course is required in some countries, as compared with our one year's special training. In some university hospitals abroad the students receive instruction during their earlier years in the anatomical, physiological, and pathological bases of both diagnostic and therapeutic radiology before the clinical applications are reached. This is an advisable, but at present only, I fear, an idealistic method.

Some raise objection to the overburdening of the undergraduates' curriculum by special teaching in radiology. Students are supposed by some to be able to acquire the knowledge they need in the subject in the wards and out-patient department, but this is impossible; they could gain little in the way of an adequate knowledge of pathology in this manner. Training in any subject must be reasonably full and precise. Take, for example, ophthalmology: here the medical student has to learn all the details of operations, such as those for squint, cataract, and the enucleation of the eye, but he is not likely to put his knowledge into effect by operating on

his patients once he commences private practice. No more is he likely to practise as a radiologist because of an elementary knowledge of the subject. If the curriculum is overburdened, much of what is unnecessary in it should be drastically excised so that sufficient attention can be paid to recent subjects of such great and general importance as radiology.

It is difficult for us to realize how the whole face of medicine and surgery has been changed within the lifetime of most of us by the advent of radiology. Thus the fourth edition (1902) of Osler's *Medicine* had only about 100 words on x rays in a monumental volume of nearly 700,000 words of text; and his 1912 edition was much behindhand in its references, failing to note the use of x rays in diagnosis of lung tuberculosis or gastric cancer, though it is mentioned as of help in "hour-glass stomach." But in 1907 there were already observations on pulmonary tuberculosis as shown by x rays; in 1908 on cancer of the stomach and colon; and in 1911 duodenal ulcer first came into prominence through surgical and radiological advances.

Advance in any new specialty is slow enough owing to internal and external obstacles, but recognition by others of the advances made is even slower. We should realize that the diagnostic and curative possibilities of radiology will largely remain as, so to speak, capital locked up and not put to full use, unless its achievements can be so exhibited as to make a wide appeal to the general practitioners of each country. Many practitioners use it only as the medical defence societies urge—for fractures and dislocations. Others are over-credulous, as the practitioner in America who lately referred a patient to a radiologist for measurement of the mitral valve! Radiology offers an immense range of opportunities for proving its value, and has also very definite limitations: to diffuse more widely accurate knowledge of it the very active Radiological Society of North America has recently organized a three-year campaign of education in radiology throughout the country, and it might be well perhaps if its example were to be followed here. The private practitioners in a country have a unique position; they see the vast majority of patients first of all, and they are thus in a position to advise their patients (for example, in cases of gastric ulcer) whether they will undergo medical, surgical, or other specialist treatments. In addition, practitioners have a very good knowledge of the ultimate results of medical or specialist treatments. Their co-operation, therefore, must be solicited if the general level of health of the community is to benefit by recent advances in medicine.

As to delay in diagnosis, do we not often see patients who have suffered for years from undiagnosed gastric symptoms before a barium meal examination has been suggested? And in the sphere of treatment, how many patients suffering from exophthalmic goitre, leukaemia, and menorrhagia have spent months or years of ill-health with little-availing medical treatment before radiotherapy has been adopted?

Early Diagnosis and Treatment of Cancer

The most important sphere in which the co-operation of the general practitioner is essential is the early diagnosis and treatment of malignant disease. This has been insisted on by all the cancer organizations throughout the world, but it is only by the general practitioners gradually coming to realize the possibilities of radiotherapy that early treatment can be instituted for very many cancer patients. There are two reasons for this: (1) that so many patients are already at an inoperable stage by the time the disease is disclosed or discovered; and (2) that so many patients are not good operative risks or have an invincible repugnance to operation. Because of this, the possibilities of radiotherapy should be widely known, and for each case should be explored without delay. Many of these patients would benefit by being referred directly to the radiotherapist. Professor Regaud has well said that the *first* treatment that the cancer patient has is the all-important treatment, and that it is quite indefensible to take up the attitude of only calling on the aid of the radiotherapist when surgery has proved a failure. On the contrary, the radiotherapy expert should be asked for his opinion before the commencement of each patient's treatment, in case radiotherapy is indicated then or at a later date.

If we consider the statistics of the Ministry of Health as to the number of deaths occurring annually from cancer of different regions—for example, 5,000 or more from cancer of the breast—we may ask: For how many of such cases has adequate radiotherapy been utilized? And where such a valuable aid has not been called in: What circumstances prevented its utilization? It is in the public interest that such questions be asked. I ventured to point this out in an article in the *Lancet* on breast cancer six years ago, but the question still awaits a satisfactory solution.

This discussion would, I believe, prove of permanent value if, under the auspices of the Section in the British Medical Association, or otherwise, steps could be taken towards an active campaign in radiology similar to that which has been carried out in Sweden at intervals in the past twenty years, and has been in progress lately in North America in the medical and lay press. Such campaigns have resulted in Sweden, and ought to result in Anglo-Saxon lands also, in a material raising of the general standard of the public health, and in an increased respect of the public for modern medicine, and for radiology, one of its most recent—and valuable—subdivisions.

RADIOLOGY AS AN AID TO THE GENERAL PRACTITIONER*

BY

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In this discussion I speak as a general practitioner who regards all kinds of specialist treatment as primarily arising from the needs of the general practitioner, and closely associated with, and dependent upon, his interest and co-operation.

In most forms of specialist practice the association between specialist and general practitioner is close, and necessitates consultation between the parties, to the advantage of all concerned. An exception to this relationship exists notably in the case of the bacteriologist and pathologist. Here the assistance required can generally be obtained without a personal interview. Nevertheless, even in this case, I am of opinion that there is a definite loss in the acquisition of knowledge by both parties resulting from the lack of personal discussion and the substitution of written reports.

The relationship between the radiologist and general practitioner may be said to fall somewhere between the ideal of the surgical or medical consultation and the more remote pathological or bacteriological report. My first point is to advocate a more close and personal contact between the radiologist and the general practitioner, for I think that in the peculiar nature of your specialty there is a danger of the tie becoming weakened further

* Read in opening a discussion in the Section of Radiology and Electrotherapeutics at the Annual Meeting of the British Medical Association, Bournemouth, 1934.

or even lost, to the disadvantage of all concerned. The reasons for this may be put under three heads.

1. The science of radiology (especially in its therapeutic aspect) is technically outside the sphere of knowledge of the general practitioner.

2. The science of its application is advancing so rapidly that the general practitioner in busy practice cannot hope to keep pace with it. In the case of those of my own standing in the profession it may be said to have developed altogether since we entered practice.

3. It is necessarily an *expensive* specialty. The general practitioner has to study closely the means of his patient, and must therefore often hesitate to recommend an expensive form of treatment without good knowledge of its nature and its probable efficacy.

With these general observations I turn to the main conditions which experience leads me to seek your assistance, and I have no doubt that if my knowledge of your specialty was more complete there would be fewer gaps in the rather disjointed category which I have made out.

The Field of Diagnosis

(*a*) *Bone Injuries and Misplacements.*—The value of *x* rays needs no emphasis in this class of case. While it is easy to point to the necessity of this kind of examination in all cases (the Medical Defence Union is eloquent on this point) in practice this is not possible. The general practitioner must discriminate to save needless expense. For example, as medical officer to a public school, if I acted literally on this advice I should be sending a daily stream over here to be examined by *x* rays. I. I could give more work to the radiologist if there were a simpler and less expensive method of examining minor injuries to show direct fracture or misplacement. I am quite aware of the difficulties involved, and am in no doubt as to the answer I shall receive.

(*b*) *The Thorax.*—I will not do more than acknowledge the great help of *x* rays in locating fluid in the pleural cavity. As regards pulmonary tuberculosis, the public has a blind faith in the result of an *x*-ray picture of the chest in the diagnosis of this condition. The interpretation of those films (in which I am specially interested) is, I think, one of the most difficult and highly specialized branches of *x*-ray reading. Their practical value is great in persuading a patient with early symptoms to appreciate the need for strict treatment. I think the practitioner without more than a general knowledge is apt to be unduly impressed by signs of disease. He would sometimes take a more reasoned view if he had a film of his own chest as a standard. The value of this form of examination in ascertaining whether disease is sufficiently unilateral, in deciding the suitability of limiting expansion by artificial pneumothorax or phrenic avulsion, is now well recognized.

As regards the heart, during war service at Netley I was fortunate in having opportunity during spare time of screening chests in the *x*-ray room. At first, chiefly interested in lungs, I soon became more and more interested in screening the heart shadow, and became accustomed to screen all patients with heart symptoms in my wards. The value of the information derived from this addition to the usual methods of examination impressed itself more and more forcibly on me. There is a saying that "Every picture tells a story," and I think this is true of the *x*-ray picture of the heart. The variation in shape and size, the vertical and transverse limits, the general appearances of the shadow can, I think, add appreciably to the knowledge necessary in treating heart conditions. On attempting to put this method into practical use on returning to civil practice I was confronted with a difficulty that I had not foreseen. It is only when the method used is the same that results are comparable. I would press to-day the need for a fixed method of procedure in making these examinations. The upright position, the distance at which exposure is made, the clear definition of the mid-sternal line and the nipple point, when possible, are the most important points.

(*c*) *Abdomen.*—The bismuth meal raises a special problem. There is need for something more simple and less expensive than an elaborate and costly series of beautiful pictures where expense is so often an important consideration. In many cases a series of drawings from screening, with regional photographs, would be sufficient. The results of *x*-ray pictures of doubtful appendix cases is disappointing in my experience. How far can we rely on an *x*-ray of the gall-bladder or kidney in the case of suspected stone? Has the introduction of the use of dyes reached a degree of certainty in such cases?

Treatment

There are in my experience various conditions in which the general practitioner feels the need of this kind of treatment, but is often deterred by lack of knowledge of the likelihood of its success.

Exophthalmic Goitre.—I believe treatment by *x* rays of this group of diseases is carried out frequently. Personally, having seen one case where the result appeared to be most unsatisfactory, I have hesitated to advise it again. If there are cases which are suitable for this method of treatment, what are the conditions by which they can be distinguished?

Sterilization in the Female.—The general practitioner is keenly interested in the production of sterility in the female by *x* rays or radium. The most common type of case is where production of an artificial menopause or the quickening of the natural process is necessary for the welfare of the patient. I hope we shall hear to-day something definite on this point. The practitioner wants to be in a position to say to his patient that this form of treatment will entail (roughly speaking) so many visits to the radiologist and the approximate cost. I would emphasize at this point how much the practitioner needs to know the cost and time factors in all kinds of specialist treatments. A further important point in cases of this kind is how far we can assure or reassure our patients on the after-effects of such treatment.

Sterilization to Prevent Conception.—I am not one of those (and there are many in the profession) who view with alarm the state of the law in this country in this connexion. I have had cases, and I can envisage others, where I should not hesitate to advise and abet in obtaining security against conception by *x* rays or radium. It would be of interest to hear if radiologists view with disquiet the giving of treatment with this object on the request of a practitioner of experience and repute. One frequently hears in the ranks of both the profession and the public the opinion that the laws of this country need amending in relation to sterilization and the induction of abortion. I can only say in my professional experience I have never felt the need, nor have I felt handicapped in giving advice or treatment to this end.

Skin Treatment.—I imagine that practitioners as a class are fully alive to the success of radium and *x*-ray treatment of malignant disease of the skin and epithelium. Rodent ulcer, cancer of the lip and tongue, and of the cervix, are cases in point. But there are many conditions of the skin where the practitioner feels that *x*-ray treatment might be of value, but he is ignorant of its possibilities. Many dermatologists must be using this form of treatment in the more chronic skin eruptions. Why do we not hear more of the results and the conclusions at which they arrive? How far can we rely on such treatment, for example, for a speedy cure of multiple warts on the hands? Patches of psoriasis and the like

are also a frequent difficulty in general practice; we should often advise *x*-ray treatment if we knew more of its probable utility.

Carcinoma of the Breast.—This is a condition which has been only too familiar to the general practitioner from the days when the early use of the knife offered the only prospect of cure to the more efficient stage of post-operative *x*-ray treatment. The good results of this addition to our resources are widely appreciated, but, from the patient's point of view, the number of treatments needed, the cost, and loss of time involved, as well as the strain of a procedure that must ever remind the afflicted of the possibility of recurrence, are conditions which perhaps we are apt to appraise too lightly. Personally, the results that I have at present seen from the treatment of this condition by radium encourages me to hope that the knife will in time be displaced by radium and the need for subsequent *x*-ray exposure greatly lessened.

Conclusion

Though I am only too conscious of the disconnected sequence of my remarks, and of the many gaps in the subject, I hope that I have raised a sufficient number of points from the angle of view of the general practitioner to stimulate discussion in a useful direction. May I summarize my chief points as follows?

1. The lack of close co-operation between general practitioner and radiologist.
2. The difficulty the general practitioner experiences in keeping abreast with the advances in the development of your specialty.
3. The need for a closer co-operation within your ranks in order to harvest the experiences and the results at which you arrive.
4. The need for a more systematic presentation of these results to the general practitioner who seeks them, more particularly in post-graduate study.

A CONTRIBUTION TO THE COMPARATIVE STUDY OF THE TUBERCULIN TESTS IN INFANTS AND CHILDREN

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A positive tuberculin test is now universally regarded as indicating tuberculous infection. The importance of the test in infancy and childhood is therefore threefold: (*a*) *in the diagnosis of tuberculous disease,* for the younger the child the more likely is a positive tuberculin test to be associated with an active tuberculous lesion; (*b*) *in dealing with home contacts,* for the test will indicate those already infected, a point of great importance when considering separation of a child from a tuberculous parent; and (*c*) *in connexion with B.C.G. vaccination,* as it is claimed that both the injection and the ingestion of this vaccine is followed after a varying interval, in a large proportion of cases, by a state of tuberculin hypersensitivity, even if all contact with tuberculous individuals is avoided—so that a positive tuberculin test will indicate that the period of isolation advisable after vaccination can be terminated, and it will also form a contraindication to revaccination.

It therefore seems essential that the various known tuberculin tests be compared not only as regards their relative sensitivity, but as regards the ease with which they can be employed in infants and children in practice; and, moreover, that there should be universal agreement as to what constitutes the minimum positive reaction for each test. Not only is the latter factor found to vary according to author, but one finds important and careful investigations reported in which no statement at all is made as to what the writers have considered a positive reaction.

Material of Investigation

The 166 infants and children tested were under the care of one of us (B. W.-H.) either at the Hôpital des Enfants-Malades, Paris, or the Fondation Zola, Médan, or in the wards of Professor Ombrédanne, surgeon to the Hôpital des Enfants-Malades. Their ages were as follows: under 1 year, seventy-two; 1 year, thirty-two; 2 to 4 years, sixteen; and 5 to 16 years, forty-six. As the chief importance of the tuberculin test is in children under the age of 2 years, it was considered preferable for the purpose of this investigation to divide the children into two groups: Group I (under 2 years), 104; and Group II (over 2 years), sixty-two. Ten children were diagnosed as suffering from, or suspected of, clinical tuberculosis. The classification of the two groups was as follows:

Group I:	Cervical adenitis.
	Arthritis of knee.
Group II:	Pulmonary tuberculosis (T.B. found).
	Pulmonary tuberculosis (no T.B. found).
	Tuberculous meningitis (no T.B. found).
	Tracheobronchial adenitis (no T.B. found).
	Cold abscess of rib.
	Pleurisy (T.B. found).
	Pleurisy (no T.B. found).
	Anal fistula.

The remaining 156 children may be considered as clinically non-tuberculous. In most of the children of Group II information as to whether they had been vaccinated with B.C.G. was not available. This was, however, known in ninety-six of the 104 children under 2 years, amongst whom twenty-nine had been vaccinated—seven less than six weeks, six between six weeks and three months, and sixteen over three months before the tests were performed.

Technique of Investigation

The tests were carried out over a period of two months on five consecutive series of children. All the tests (with the exception of the Pirquet tests in the first series of thirty-eight children, which were performed by B. W.-H.) were carried out, and all the reactions read and noted, by one of us (G. G. K.). The first series of thirty-eight children did not have a Moro test, otherwise the routine was the same.

The Pirquet, the Mantoux (1 in 1,000), and the Moro tests were performed at the same time. Two days later the test areas were inspected, and if all were found negative (or doubtful) the Mantoux test (1 in 100) was carried out. Two days later the test areas were again examined, and, if still negative, the Mantoux test (1 in 10) was performed, a control with broth being done at the same time. The tests were again read two and four days later, whatever the result.

The site of all the tests (even if positive) was thus inspected on alternate days for eight days (unless the patient had left the hospital), and (except in the case of the Moro test, where the type of response does not lend itself to these measurements) the reactions, *however slight,* were measured and palpated. Erythema was noted as "faint or marked," swelling as "slight, medium, or marked." Discoloration (blue, green, yellow) indicating bruising was also noted, as well as staining following erythema.

Technique of Individual Tests

Pirquet Test.—A drop of pure tuberculin (Pasteur Institute) was placed on the skin of the upper part of the right arm with the blunt end of a vaccinostyle.* A scarification about

* This is a metal instrument closely resembling a pen nib, commonly used for performing this test in France.

TABLE I.—*Moro Test. Positive and False Reactions*

A, area rubbed with ether only. B, area rubbed with ether and ointment. C, area rubbed with ointment only. First readings those taken two days after test.

GROUP I

Positive Reactions

1. Three macules at A, one papule at B; two days later, papule at B only present; six days later, papule desquamating.
2. Confluent papules over whole of both areas B and C, more marked at C; six days later, still present, but fainter.

False Reactions

1. Confluent papules over A and B, more marked at A; a few faint papules at C; two days later, papules at B more marked; four days later, all still present, but fainter.
2. Patchy erythema at A; two days later, erythemata over whole chest, most marked at A; four days later, *nil* to be seen.
3. Faint, blotchy erythema at A; two days later, *nil* to be seen.
4. A few papules on A and B.
5. A few small macules and faint erythema at A.

GROUP II

(No false reactions, but see No. 18 below)

Positive Reactions

1. One papule at B; still visible on sixth day.
2. Confluent papules over area 10 by 15 mm. at B; still visible on eighth day.
3. Bright erythema 3 by 4 mm. and a few small vesicles at B, 2 by 3 mm. bright erythema at C; lesion at B desquamating on eighth day.
4. Papules (nearly confluent) over whole of B, fewer and smaller papules at C; no definite change on eighth day.
5. Four papules at B; *nil* to be seen on fourth day.
6. A few faint macules at B; *nil* to be seen on fourth day.
7. Many small vesicles at B, four papules at C; no change on eighth day.
8. Three large vesicular papules at B, a few very small papules at C; no change on eighth day.
9. A few vesicular papules at B; no change on sixth day.
10. Several small papules at B and C, more marked at B; no change on sixth day.
11. Very small numerous papules at B and C, more marked at B; in addition, a few vesicles at B; no change on sixth day.
12. Four vesicular papules at B, three vesicular papules at C; no change on fourth day.
13. Many confluent papules at B, many papules at C; all fainter on eighth day.
14. One small papule at B, three small papules at C; no change on eighth day.
15. Many small papules (almost confluent) over whole of B and C; fainter on eighth day.
16. A few faint papules at B and C, more at B; fainter on sixth day.
17. A few small papules at B; patient not seen later.
18. A few very faint papules on one side of A; almost confluent papules over whole of B and C; much fainter on eighth day.
19. Many large papules (some vesicular) at B, a few papules at C; no change on fourth day.
20. Five papules (two of which large) at B; no change on sixth day.
21. Many papules (some large) at B, a few very small faint papules at C; no change on eighth day.
22. A few papules at B; no change on eighth day.
23. A large papule at B, a small papule at C; still visible on fourth day; *nil* to be seen on sixth day.
24. Several papules at B, a few faint small papules at C; no change on eighth day.

1 cm. in length was then made with the sharp end, first on the skin about 5 cm. above the tuberculin, and then through the drop of tuberculin. Bleeding was not always avoided. The arm was left exposed to the air as long as possible. A reaction was assumed to be positive when there was redness (or redness and swelling) at the sides of the lower scarification in the absence of these signs in the control. In one infant (not vaccinated with B.C.G. and from a non-tuberculous household) the lower scarification showed a linear erythema only, and this reaction was not considered positive, as the intradermal test up to 1 in 10 remained negative.

Moro Test.—Tuberculin ointment, consisting of two parts of tuberculin and one part of lanoline, freshly prepared, was employed. The lanoline was heated in a mortar on a water-bath to 50° C., and when it had liquefied the warmed tuberculin was added drop by drop. To obtain a uniform paste the mixture must be thoroughly stirred till cool. In about fifty children three similar squares, one below the other, and separated from each other by about 2 cm., were sketched out with a skin pencil on the middle of the chest—4 sq. cm. for the younger and 5 sq. cm. for the older children. Owing to the smallness of some of the chests the lowest square was often situated partly or wholly on the epigastrium. In the remaining children these squares were not mapped out, as it was found possible to gauge by eye the areas required. The skin in the upper two areas was rubbed across twelve times with a swab dipped in ether. The lowest of these two areas and the remaining "non-etherized" one were then rubbed for thirty seconds with a bead of the ointment. A separate finger was used for each of the two areas, and the time estimated by counting an equal number. In this way it was hoped to obtain at least some measure of uniformity between the test and the control, and the tests in the other children. The chest was left exposed to the air as long as possible.

A positive reaction was considered to be the presence of one or more definite macules, papules, or vesicles in the middle, lower, or the middle and lower areas, in the absence of any reaction on the upper area, or when the reaction in the lower areas was considerably greater than in the upper area. In Table I are summarized the Moro tests which showed any reaction at all at any of the areas. Particular care was taken not to mistake papules and rashes commonly found on the chest for reactions due to the rubbing of the ether or ointment.

Mantoux Test.—Each dilution was freshly prepared for the day of the test from pure tuberculin (Pasteur Institute) with sterile distilled water and 0.5 per cent. phenol: 0.1 c.cm. was injected each time, a glass hypodermic syringe and intradermal needles being used for the first series of thirty-eight children, the former being replaced by a Pictet intradermal syringe later. With the latter syringe 0.1 c.cm. of the solution is ejected as the result of performing a complete turn of, instead of pushing, the piston, and this considerably facilitates the injection. [See description of syringe (G. G. K., *Lancet*: In the press).] The test with the 1 in 1,000 dilution was performed on the right, with the 1 in 100 dilution on the left, forearm, and with 1 in 10 dilution lower down on the right forearm, when 0.1 c.cm. of the control was injected at the same time on the lower part of the left forearm. For the latter the same glycerin-veal broth employed for the preparation of the tuberculin was obtained from the Pasteur Institute. In the first thirty-eight children it was used unaltered, but for the others the broth was evaporated down and then diluted ten times with distilled water with 0.5 per cent. phenol. In the first thirty-eight children an ordinary hypodermic syringe was employed for the tuberculin 1 in 10 and the control; in the next fifty the Pictet syringe for the 1 in 10 tuberculin and an ordinary syringe for the control. In the remainder a Pictet syringe was used for both. In order to discount any difference in reaction as a result of the different type of syringe the 1 in 1,000 and the 1 in 100 tests in twenty-two children were carried out with each syringe at the same time. No appreciable difference in traumatic or minimal reactions (see below) were noted. Moreover (see Table IV), the percentage of total traumatic reactions with both syringes is the same.

A positive reaction for any of the intradermal tests was constituted by an erythema of at least 10 mm. in diameter, showing slight swelling or a definite erythema over 10 mm. in diameter.* Erythemata 5 mm. in diameter to the above limit were considered as doubtful reactions and the test repeated with the next stronger dilution. Doubtful reactions with the dilution of 1 in 10 gave rise to difficulty in interpretation (see Table II and footnote [11]).

Results

(A) RELATIVE SENSITIVITY

Table II indicates the results obtained with these tests.

Comparison of the Moro test with the other two tests in the younger group is difficult owing to: (1) the fact that thirty-eight children were not tested, (2) the relatively small number of positive tuberculin tests, and (3) the occurrence of false reactions (see above). The Pirquet

* Evidence for the need of assuming this as the minimum positive reaction has already been brought forward by one of us (G. G. K., *Lancet*: In the press).

and Mantoux (1 in 1,000) tests appear equally sensitive, the Mantoux (1 in 100) more so, and no further positive reactions were obtained with the dilution 1 in 10. Roughly, the number of positive reactions per 100 children under 2 years with the Pirquet test and Mantoux test, in the three increasingly strong dilutions, are 4, 4, 6, 6. In the older group comparison of the three tests is possible, as there were no reactions with the ether, and the number of positive tests is much greater. The number of positive reactions per 100 children, aged 2 to 16 years, for the three tests were therefore: Moro, 42 to 39 (see footnotes [4] and [5] in Table II); Pirquet, 48; and Mantoux (in the three increasingly strong dilutions), 50 (see footnote [6]), 55 (see footnotes [8], [9], and [10]), 61 to 55 (see footnotes [11], [12], and [13]).

To summarize, it may be stated that the Moro test is the least sensitive of the three tuberculin tests, the Pirquet and the Mantoux (1 in 1,000) about equally sensitive (in favour of the latter), the Mantoux (1 in 100 and 1 in 10) increasingly more sensitive than the last two. It is interesting to note that while in children under 2 years the Mantoux (1 in 100) increases the number of positive reactions by 50 per cent. on the Pirquet, it is only two more children in a 100 that are found positive. In the older group the number of positive reactions is increased by 13 per cent. only, but six to seven more children per 100 tested are found positive. Thus in testing infants the chances of finding a positive reaction with the Mantoux test when the Pirquet is negative are very much smaller.

Finally, it should be noted that all the diagnosed or suspected cases of clinical tuberculosis were found to be Pirquet-positive and Mantoux-positive (1 in 1,000); but that two of these patients were negative to the Moro test: (*a*) pulmonary tuberculosis (T.B. found), and (*b*) tracheobronchial adenitis (no T.B. found).

(B) Technical Advantages and Disadvantages in Practice

The Pirquet test is undoubtedly the simplest to perform: the material is always at hand, the vaccinostyle looks like a nib and does not frighten the child, and the test can be carried out most rapidly. Certain precautions must, however, be taken. Thus: (1) so far as possible bleeding should be avoided, as this may prevent contact of the tuberculin with the dermis; (2) the control scarification should be made above and not below the tuberculin, as otherwise the latter may run down on to the control area; (3) the lower scarification should be done *through* the tuberculin and the tuberculin not be deposited on it afterwards; (4) the tuberculin should be left exposed to the air for at least a few minutes, after which it may be gently wiped off (a dressing should not be applied, as the latter magnifies the importance of the operation in the eyes of the parents); (5) it is suggested that whenever possible the test be carried out by the medical man himself.

The reputed claim of the simplicity of the Moro test cannot be maintained. Thus: (1) if Table I is referred to it will be seen that out of the twenty-six positive tests in nine the area rubbed with tuberculin only gave no reaction, and in thirteen more the reaction was less marked in the area which had previously not been rubbed with ether, the preliminary cleansing of the skin with ether thus appearing to be essential; (2) the rubbing of the skin with ether gives rise in the young children (for whom the simplification of a tuberculin test is particularly desirable) to false reactions (see Table I), presumably due to their more tender skin: hence, it is essential that a control area rubbed with ether only should form part of the test; (3) the older children in this investigation strongly objected to the smell of the ether, the rubbing with ether proving, in fact, to be the most trying part of all the procedures, and, presumably, is very disagreeable to infants who cannot voice their protests; (4) rubbing two areas with ether and then one with ointment renders the operation a more prolonged one than either the Pirquet or the Mantoux test; (5) the test is messier than either of the other two, as the grease does not dry; (6) a positive reaction often results in a group of papules covering an area as much as 7 cm. in diameter, and this is more objectionable to the parents than the single erythematous patch of a positive Pirquet or even Mantoux test; and (7) it is advisable to have the ointment freshly prepared.

The Mantoux test has the following disadvantages: (1) The dilutions must be fairly freshly prepared (not more than two weeks old); (2) the test is more of an operation in the eyes of children and parents, as something is injected and the apparatus is more complicated; (3) it is more painful. Even if the needle is small and sharp, pain is

Table II.—*Relative Sensitivity of the Three Tuberculin Reactions.*

Age	Pirquet			Moro				Mantoux									
								1 in 1,000				1 in 100				1 in 10			
	No. Tested	Positive		No. Tested	Positive		% Positive of Whole Series	No. Tested	Positive		% Positive of Whole Series	No. Tested	Positive		% Positive of Whole Series	No. Tested	Positive		% Positive of Whole Series
		No.	%		No.	%			No.	%			No.	-%			No.	%	
Under 2 years	104 [1]	4	3.8					104	4	3.8	3.8	95	2	2.1	5.8	87	0	0	5.8
	66 [2]	3	4.6	66	2 [3]	3.0													
2 to 16 years	62	30	48.3	60	24	40.0	41.9 [4]—38.7 [5]	61	30	49.1	50.0 [6]—48.2 [7]	22	2	9.0					
													3 [8]	13.0 [8]	54.8 [9]—53.2 [10]	19	4–1 [11]	21.0—5.2	61.1 [12]–54.8 [13]

[1] In one child the test gave a linear erythema; this was not considered positive, as the Mantoux test up to a dilution of 1 in 10 remained negative.
[2] Excluding thirty-eight cases in which the Moro test was not performed.
[3] One of these reactions was very feeble (see Table I).
[4] Assuming that the two patients not tested (one was in a plaster jacket and the other had a rash on the chest) would both have reacted positively.
[5] Assuming that these two patients would both have reacted negatively.
[6] Assuming that the patient not tested (supply of tuberculin ran out) would have reacted positively; almost certainly so as the Pirquet reaction was positive.
[7] Assuming that this patient would have reacted negatively.
[8] Adjusted on the assumption that the nine patients not tested (left hospital) would have reacted in the same proportion as those who did.
[9] [10] Dependent on [6] and [7].
[11] In only one of these was the test definitely positive by the criteria adopted; in the others it was doubtful; thus the reactions were: (*a*) 15 by 22 mm. ill-defined erythema (control negative), patient not seen on fourth day; (*b*) 12 by 15 mm. ill-defined erythema (control negative), negative on fourth day; (*c*) 6 by 6 mm. faint erythema and slight swelling (control negative), patient not seen on fourth day.
[12] Assuming all four reactions with 1 in 10 dilution and the one not tested with 1 in 1,000 were positive.
[13] Assuming only one of the four reactions with 1 in 10 was positive and the one not tested with 1 in 1,000 was negative.

TABLE III.—*Mantoux Test. Doubtful and Minimal Reactions.*

Age	1 in 1,000						1 in 100						1 in 10					
	No. Tested	No. Positive	Minimal Reactions		Doubtful Reactions		No. Tested	No. Positive	Minimal Reactions		Doubtful Reactions		No. Tested	No. Positive	Minimal Reactions		Doubtful Reactions	
			No.	%	No.	%			No.	%	No.	%			No.	%	No.	%
Under 2 years	104	4	29 (24)	*27.8*	3 (3)	*2.8*	95	2	38 (32)	*40.0*	7 (7)	*7.1*	87	0	54 (43)	*62.0*	4 (3)	*4.5*
2 to 16 years	61	30	9[1] (7)	*14.7*	2 (1)	*3.2*	22	2	8[2] (6)	*36.3*	1 (1)	*4.5*	19	4–1[3]	7 (6)	*36 8*	1–4[3] (0)	*5.2–21.0*

[1] One of these became positive with dilution 1 in 100; another showed a slight stain only till eighth day, when there developed a faint erythema 10 mm. in diameter (negative with dilution 1 in 100).

[2] One of these became positive with dilution of 1 in 10.

[3] See footnote [11] in Table II.

Numbers in parentheses represent reactions visible or showing staining at least on fourth day after performance of test.

caused by the distension during the injection (in infants considerable force is often required to eject even 0.1 c.cm. from the ordinary hypodermic syringe); (4) if the test is negative with 1 in 1,000 dilution the parents are more likely to object to the repetition of an apparently exactly similar operation.

The test is considerably simplified, however, by the use of a Pictet intradermic syringe (see above).

(C) MINIMUM POSITIVE REACTIONS

Pirquet Test.—A reaction should be regarded as positive if there is at least 1 mm. of erythema on each side of the lower scarification, in the absence of such change in the upper one. A linear erythema should not be regarded as positive, and it is advisable in such cases to carry out the Mantoux test (1 in 100). It should be noted that six of the thirty-four positive Pirquet tests were more marked on the fourth day after the test.

Moro Test.—The presence of even one definite large papule on the area rubbed with the ointment, in the absence of any change on the area rubbed with ether only and of papules or a rash on the neighbouring skin, may be regarded as a positive reaction. However, owing to the frequency of the latter on many chests, it is advisable, when only one or two papules are present, or any doubt is felt, to perform a confirmatory test with the Pirquet or the Mantoux (1 in 1,000). An area of erythema only should not be regarded as a positive reaction.

Mantoux Test.—An area of erythema 10 mm. in diameter, showing some swelling to touch, or a well-defined erythema of greater diameter, should be regarded as the minimum required for a positive reaction. Erythemata 5 mm. in diameter up to the above measurement should be regarded as doubtful reactions, and the test performed with the next stronger dilution. Table III gives the number of these doubtful reactions with each dilution in each group. Only two out of a total of thirteen (1 in 1,000 and 1 in 100 dilutions only) were positive with the next stronger dilution. One of the positive reactions with 1 in 1,000 and one of the positives with 1 in 100 were doubtful two days after the test, but became positive on the fourth day.* It is therefore advisable, when a doubtful reaction is obtained, to postpone carrying out the test with the next stronger solution until the test has been reinspected on the fourth day.

Table IV gives the number of obviously traumatic reactions as shown by blue, green, or yellow colouring of bruising. It is of interest to note that the percentage is the same for both groups of children and whether an ordinary hypodermic or Pictet syringe is used.

* It should also be noted that five of the thirty-four positive reactions with 1 in 1,000, one of the four positives with 1 in 100, and the definitely positive reaction with 1 in 10 were more marked on the fourth day after the test.

Table III gives the number of minimal reactions noted—that is, all reactions showing erythema, or erythema and swelling, less than 5 mm. in diameter. It will be noted that their percentage increases with each dilution, particularly in the younger group. It must be emphasized that 118 out of 145 (80 per cent.) of even these reactions show some staining at least on the fourth day after test. The need for the use of a control test (as described) when the Mantoux test with the dilution 1 in 10 is employed is obvious, especially if the test is stopped at this dilution. The 145 control injections gave rise to eight reactions showing bruising, sixty-three (43 per cent.) minimal reactions, eight reactions corresponding to those described as "doubtful" (seven still visible on the fourth day), and four reactions (two visible on the fourth day)

TABLE IV.—*Mantoux Test. Reactions Indicating Bruising.*

Age	1 in 1,000			1 in 100			1 in 10		
	No. Tested	No. Showing Bruising	%	No. Tested	No. Showing Bruising	%	No. Tested	No. Showing Bruising	%
Under 2 years	104	8	*7.6*	95	10	*10 6*	87	6	*6.6*
2 to 16 years	61	3	*4.9*	22	3	*13.6*	19	3	*15.7*

All Dilutions

Age	No. of Tests	No. Showing Bruising	%	Group I Only	No. of Tests	No. Showing Bruising	%
Under 2 years	286	24	*8.3*	Ordinary syringe	107	9	*8.4*
2 to 16 years	102	9	*8.8*	Pictet syringe	179	15	*8.3*

measuring 10 mm. in diameter or more. Eleven of these last twelve reactions occurred in the children under 2 years. As, from what has already been stated, these minimal and doubtful reactions cannot be attributed to the trauma of the injection or to the type of syringe used, one is tempted to suggest that they are due to the irritation of some substance* in the broth in which the tuberculin is prepared, and that the infant's skin is particularly sensitive to it.

(D) THE B.C.G. VACCINATED CHILDREN†

While admitting that the smallness of the numbers renders conclusions impossible, it is nevertheless of interest

* This is left intentionally vague. Further work on this question is now being carried out by one of us (G. G. K.).

† The results under this heading appear contradictory with those obtained by one of us in papers previously published. Account should therefore be taken of the small number of vaccinated children here tested.—B. W.-H.

to point out that of the twenty-two infants who had been vaccinated with B.C.G. over six weeks before (sixteen over three months before)—all by mouth except two, four a second time since birth—only two were positive to a tuberculin test. Thus:

(*a*) Vaccinated subcutaneously nine weeks before test. Had been in contact with sputum-positive mother for a few days before admission. Negative Pirquet; positive to Mantoux (1 in 100).

(*b*) Vaccinated at birth by mouth seventeen months before test. Had been in contact for eleven months with a father who coughs, but whose examinations were stated to be negative as regards tuberculosis. Positive Pirquet and Mantoux (1 in 1,000).

Conclusions

In spite of the relatively small number of children here investigated we feel justified in drawing the following conclusions:

1. The Moro test is the least sensitive of the three tuberculin tests commonly employed. The Pirquet (pure tuberculin) and the Mantoux test (1 in 1,000) are about equally sensitive, the Mantoux (1 in 100) being definitely more sensitive.

2. For use in infants and young children the Moro test* has definite disadvantages as regards technique and interpretation of results. When employed, a control test with ether only should always be carried out.

3. The Pirquet test is, for infants and young children, the simplest and easiest test to perform, and should therefore be employed first. If found to be negative, an intradermal test with a dilution of 1 in 100 should then be carried out. In older children it is worth while to repeat the test, if still negative, with a dilution of 1 in 10.

4. The Mantoux test in a dilution of 1 in 10 should always be carried out with a control injection of the broth used for the preparation of tuberculin.

5. A Pirquet test should be regarded as positive only if there is at least 1 mm. of erythema on each side of the scarified area.

6. The minimum required for a positive Mantoux test with any dilution is an area of erythema 10 mm. in diameter, associated with some swelling to touch, or a well-defined erythema greater in area than this. Reactions showing an erythema 5 mm. in diameter or more should be regarded as doubtful, reinspected on the fourth day, and, if still doubtful or negative, the test should be repeated with a stronger dilution. If a reaction obtained with a dilution of 1 in 10 is on the fourth day definitely more marked than the control test, but still under the limit of a positive reaction as indicated above, it is advisable to regard the test as doubtful, and repeat it either within ten days or in three months' time.[1]

7. It is suggested that instead of maintaining the controversy as to the relative value of the Pirquet and Mantoux tests, the test indicated here (Pirquet followed by Mantoux 1 in 100), combining both, should be adopted as a routine under a different name—for example, "the combined tuberculin test," or "the cutaneous intradermal test."

We should like to express our thanks to Professor Ombrédanne for allowing us to test the patients under his care, to Dr. Guérin, of the Pasteur Institute, for supplying the broth used for the control test, and to the ward sisters for their help during the course of the investigation.

REFERENCE

[1] Hart, P. D'A.: Medical Research Council Special Report No. 164, 1932.

* The tuberculin ointment now prepared by Löwenstein and sold in small tin tubes as "dermotubin" contains only 40 per cent. tuberculin and is recommended to be used on the arm, back, chest, abdomen, or front of leg, after preliminary cleansing with benzene, ether, alcohol, or soap and water.

CHLOROFORM-HYOSCINE AMNESIA IN LABOUR

BY

JAMES CLARK, M.B., CH.B.ED.

In the *British Medical Journal* of May 26th, 1934, there is an admirable article on hyoscine amnesia in labour by Mr. Trevor Barnett. It stresses the value of hyoscine alone in producing an amnesia which is preferable to hyoscine-morphine narcosis. Mr. Barnett has verified that the use of hyoscine without the initial injection of morphine eliminates the oligopnoea of the newborn infant. In his conclusions he stresses three conditions which make it impossible for the general practitioner to employ the method he advocates. These are:

1. The need for constant supervision during labour.
2. Occasional necessity for two nurses to control the patient.
3. That the method cannot be employed unless one is assured of the presence of the possibly necessary skilled attendants. (These, perhaps, meaning a qualified medical assistant and two nurses.)

This valuable method, then, can only be utilized in a nursing home where such skilled staff is provided.

It is my intention to try to show that a modification of the hyoscine method has proved to be of great value as a domiciliary measure. During the last ten years in general practice I have conducted eighty-four confinements on the lines about to be described. The usual antenatal examination and care are observed, and the cases selected are those which one, as a general practitioner, would select for home treatment.

Details of Procedure

Treatment is commenced when the patient complains of pains which are regular and of moderate strength. The strength and duration of pains are best gauged by abdominal palpation. I have not found that any arbitrary division between first and second stages of labour assists one's judgement. The nervous constitution of the patient and the consequent degree of fear and sensitiveness to pain are more important. As the practitioner's efforts are directed towards saving the patient from any avoidable suffering, it is better to institute the treatment too early rather than let the pains assume too severe a character. Erring on the early side does not seem to protract the labour. After all, one is dealing with a psychosomatic process and not with a stereotyped mechanism which must conform to an average standard set by textbooks.

The patient is put to bed. One nurse is in attendance. An initial light anaesthesia is induced by chloroform until the patient is quiet and sleeping between pains. (It is the experience of most general practitioners that women in labour take chloroform very well.) A hypodermic injection of hyoscine (1/100 grain) is given immediately the patient is lightly under. The hyoscine is repeated in doses of half this amount at intervals varying from half an hour to an hour. The ideal to be aimed at is that the patient should be definitely drowsy and quiet between pains. During pains discomfort is evidenced merely by subdued groans and slight restlessness. Any indication of returning awareness can be controlled by immediate inhalations of chloroform and a subsequent injection of hyoscine. This use of chloroform as an intermediary often makes all the difference between a perfect amnesia and one in which a severe pain is recalled with extraordinary intensity.

One also finds that chloroform controls any restlessness which hyoscine may produce. This, however, is rarely

necessary, as the initial administration of chloroform seems to have a subduing effect throughout. The quiet nature of a confinement conducted in this manner is such that the assistance of only one nurse is ample. After experience of the method, one learns to judge for how long during labour the patient may be left in sole charge of the nurse. She receives instructions within the discretion of the medical attendant as to the times of the next one or two injections of hyoscine. As labour progresses the dose of hyoscine is diminished to 1/300 or 1/400 grain, and the intervals of injection lengthened or shortened according to the judgement of the practitioner. I always avoid giving any hyoscine during the hour immediately preceding delivery, and administer light chloroform from the time that the anus assumes the D shape until the head is born. Should labour be delayed, as it may be in any confinement, pituitrin may be used as in ordinary cases, with certain efficiency. Ordinary everyday stimuli should not affect the patient. By these are meant daylight or artificial light, sounds of outdoor traffic, sounds of quiet voices, and of walking in the room. There is no need, therefore, to darken the room, stuff the patient's ears with cotton-wool, or preserve in the house the silence appropriate to a death-chamber.

In no case does the amnesia seem to affect the condition of the infant at birth. The delivery of the placenta is often delayed, but not unduly so; in this one respect more patience is required than in the ordinary confinement.

Maternal loss and after-recovery remain unaffected. The mother sleeps or remains drowsy for some time. Anyway, the amnesia lasts beyond delivery for a period which is directly proportionate to the extent of the amnesia induced during labour. The mother usually emerges from her amnesia with a strongly expressed disbelief that her baby has arrived.

Advantages of Method

This method is particularly valuable in general practice for the following reasons:

1. Primiparae prefer to be confined at home; the first baby is an event, and the medical attendant is expected to get the patient out of her pain as soon as possible.

2. Multiparae who have previously had protracted or exhausting labours do reasonably demand that they should not "have to go through the same again."

3. It reduces the number of instrumental labours. The practitioner is relieved of the exhortations of the patient and her relatives to "get her out of her suffering soon."

It was in such a case that the writer developed the chloroform-hyoscine technique. A young primipara was sufficiently advanced in labour as to justify vaginal examination. This she subconsciously resisted. All that could be ascertained was that the head *might* be on the perineum. The patient and her relatives demanded early relief. Chloroform was administered with a view to applying Milne-Murray forceps. Under light anaesthesia it was found that though the os was paper thin, the head was not entirely on the perineum. Hyoscine (1/200 grain) was given immediately and two injections each of 1/400 grain at half-hourly intervals. (Morphine was avoided on account of the advanced stage of labour.) A further administration of chloroform was given on the first appearance of the head, which was born under control two hours after the first light chloroform was given. Three hours after delivery the patient was asleep, the amnesia having continued until she was in a natural sleep of fatigue.

4. It enables the general practitioner to enhance his reputation or to establish it. Here is something that clinics do not do, something that general nursing-homes might, but as a rule do not, countenance; yet something that still maintains the status of a medical man as *the family doctor.*

Clinical Memoranda

CARCINOMA VENTRICULI IN A WOMAN OF 90

In view of the extreme age of the patient and the scarcity of recorded cases of stomach cancers in old people, I think the following case worthy of record.

Mrs. A., aged 90, was admitted to the City Hospital, Plymouth, on May 30th, 1934, complaining that for the previous ten days she had had constant retching and vomiting, and had been "unable to keep anything down." The bowels had not been open for the last three days, but there was no history of previous ill-health. On admission the patient was obviously practically moribund and very wasted and cachectic, and there was also cyanosis of the lips and slight oedema of the ankles.

Abdominal examination revealed a hard, freely movable mass, with well-defined margins, situated in the mid-line just below the umbilicus. The mass was about 2 inches by 3/4 inch, and was dull to percussion. Examination of the heart and pulse showed that well-marked auricular fibrillation was present. A probable diagnosis of carcinoma of the transverse colon was made, but the patient was too ill for operation to be contemplated, and she died on June 1st.

At the necropsy it was found that the mass was due to a hard, sclerosing growth of an annular type involving the pyloric end of the stomach; the edges of the growth were extremely ill defined: there was no visible ulceration of the gastric mucosa, and a few hard glands were seen lying in the lesser omentum close to the growth. No visceral deposits were present apart from the primary growth. Microscopical section of the mass demonstrated the growth to be a typical columnar-celled carcinoma. There was extreme gastric dilatation above the growth, proving that almost complete obstruction had occurred. The heart showed extreme fatty degeneration.

COMMENTARY

The literature concerning cancer in the aged is very scanty, and no case of cancer of the stomach in a patient of this age has, I believe, been reported in recent years. According to Osler the ages at which cancer of the stomach occurred in 150 cases at the Johns Hopkins Hospital were:

Age	Cases	Age	Cases
20–30	6	50–60	49
30–40	17	60–70	36
40–50	38	70–80	4

In the *American Journal of Cancer* (February, 1934, xx, 477) Shore reports that in Finsterer's series of resections of the stomach for carcinoma, one-third of the patients were between the ages of 60 and 83. Finsterer found age *per se* no contraindication to operation; in fact, while the immediate mortality in the group (60–83) was 9.5 per cent., compared with 6 per cent. in the younger patients, the percentage of five-year cures was 40 in the aged, compared with 22 in the under 60 class, showing that carcinoma of the stomach in the aged is a relatively benign condition.

It is well known that cancer of the stomach can advance to the inoperable stage without giving much evidence of its presence, and in this case, though a growth was found post mortem which must, by its size, have been present for several months, no symptoms were complained of until a few days before the patient's death from pyloric obstruction.

It is, of course, possible that carcinoma of the internal organs in the aged occurs more often than is supposed, and that the diagnosis is seldom made owing to the rarity with which post-mortems are performed in such patients, and the difficulty in getting histories from persons of advanced years.

My thanks are due to the medical superintendent of the City Hospital, Mr. G. E. Larks, F.R.C.S., for permission to record this case, and to Mr. T. J. Shields, Librarian of the B.M.A. Library, for his kindness in searching the literature.

HENRY J. KNIGHT, M.B., B.S.
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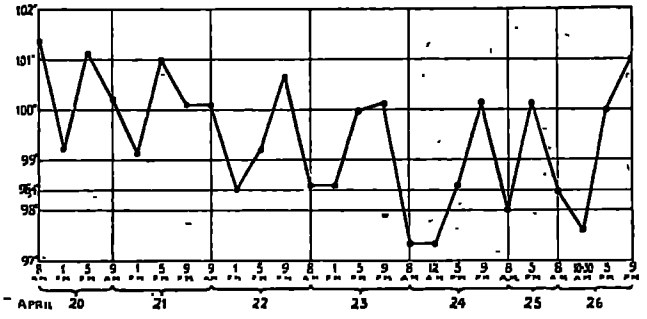
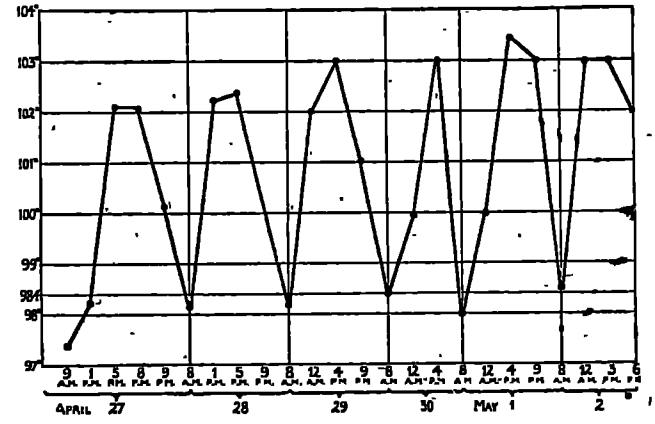
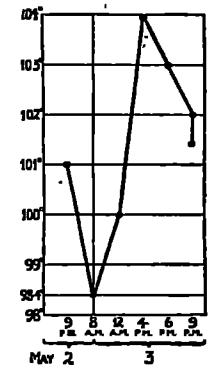
A CASE OF BR. ABORTUS FEVER

The following case may be interesting to those whose work lies in association with the acute infectious diseases and to tuberculosis officers to whom cases of asymptomatic pyrexia are often referred.

Miss X, aged 35, was a school teacher, living and working in a rural area; she had always been healthy. In January, 1934, she had a bad head cold and began to feel easily tired. In February she had "influenza," with a temperature. A stiff sore neck, lasting a week-end, occurred in March, 1934.;







she felt seedy, and her work was an effort to her. By lunch-time she wished it were bedtime. This post-meridian fatigue became so marked that she decided to go on holiday to North Berwick. There, during Easter, she developed a head cold, and first noted that she had a peristent temperature. Soon troublesome profuse and diffuse sweating also began to trouble her, this sweating taking place in the early evening and during the night. A tentative diagnosis of tuberculosis having been made, the patient was seen by me in the capacity of tuberculosis officer on April 27th, 1934. Her only complaint was her "temperature" and the drenching sweats. There was no headache, backache, pains in joints, and no cough. Slight constipation was present, but the appetite was fairly good. The patient looked alert. The skin was velvety and clammy, and there was no loss of subcutaneous fat. Pulse rate 96, soft, compressible, and of full volume. There was no acrocyanosis. Tongue dry and somewhat furred on the dorsum, clean at the tip and edges. There were no abnormal physical signs in heart, lungs, or abdomen, and taking into consideration the fact that, despite the high temperatures, there were no evidences of toxaemia, a diagnosis of miliary tuberculosis was thought unlikely. A provisional diagnosis of *Br. abortus* fever was made on the findings of high temperature, post-meridian fatigue, and profuse sweating, combined with the absence of localizing signs and toxaemia. On May 1st an agglutination test was performed. This gave a positive agglutination with *Br. abortus* of Bang to a titre of 1 in 5,000.

The appended day temperature charts (compiled by relatives, and therefore lacking in technical precision) show the interesting comparison between temperature, fatigue, and sweating.

Glasgow. S. HARVEY, M.B., CH.B., D.P.H.

AUTOTRANSFUSION IN GRAVE EMERGENCY

The following case seems to illustrate the value of autotransfusion in certain urgent circumstances. It is therefore placed on record.

R. S., a motor lorry driver, was admitted on August 2nd to the King Edward Avenue Hospital, Dartford, with a history of "a violent fall off his lorry on to the mudguard, severely injuring his left ribs." On examination the radial pulse was almost impalpable at 150 beats per minute, temperature 96° F., and extreme pallor obvious. The patient was collapsed, but felt tenderness and pain on pressure over lower left ribs and left side of the abdomen. The abdomen was rigid, distended, and dull on percussion from the costal margin to the left flank almost to the mid-line—definite indication of a ruptured spleen with intraperitoneal haemorrhage.

Using open ether as an anaesthetic, the spleen was isolated, the pedicle being ligatured, and, with the splenic vessels, removed. It was grossly lacerated, and ruptured completely through to the pedicle at the lower two-fifths, the peritoneal cavity being distended with blood. The escaping blood and the free blood in the peritoneal cavity were collected to the amount of 600 c.cm., strained through sterile muslin, citrated, and returned into the circulation through the median basilic vein. Only clots were removed from the peritoneal cavity, the residue of blood with serum being deliberately left in the peritoneal cavity along with normal saline. As the autotransfusion proceeded pulse and colour gradually improved, and the patient was returned to the ward in a very much better condition than when he left it. Continuous subcutaneous saline was administered (rectal was not possible), and 1/6 grain morphine given. Apart from three slight rigors without any rise of temperature thirty-six hours after operation, recovery was uninterrupted, and the patient, after ten days, felt perfectly fit. I ascribe the success of this case largely to the autotransfusion suggested and promptly carried out with exact technique by Dr. A. N. F. Critchley, house-surgeon.

COMMENT

This hospital has a satisfactory transfusion service, with donors available with reasonable promptness, but at its best this accessibility is not comparable with that of autotransfusion, as in this case. Further, such blood must be definitely superior for transfusion to blood from the best of donors (correct group or universal), none of which can be guaranteed to be 100 per cent. free from the risk of an anaphylaxis in some degree. It would be interesting to know from those with wide experience of blood transfusion how far the field of autotransfusion has been explored and made use of. Excluding blood from infected parts, or blood containing extraneous material, such as the contents of ruptured liver cells or bile ducts, it would seem that where the patient's own germ-free blood could be carefully collected it would prove of great service for autotransfusion in cases with danger of fatal shock through haemorrhage—for example, ectopics, ante-partum and post-partum haemorrhages, and operation cases in grave injuries with haemorrhage before and during operation.

M. W. RENTON,
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Reviews

MEDICAL BEHAVIOUR

An extremely wise book is *The Doctor and his Patients*,[1] a collection of papers by Dr. ALBERT KRECKE of Munich, translated from the second German edition by Margaret M. Green. There are twenty-three articles, all of them relatively short, and every one of them worth while. They deal with the relations of medical practitioners with one another and with their patients, most of them written from the point of view of an experienced surgeon for the benefit of the young general practitioner. They are full of understanding both of the mental attitude of patients towards their maladies and of the difficulties of the young doctor, whether family doctor or junior specialist, in the daily conduct of his work. There is naturally some repetition, and the book should not be read straight through, but there is not a chapter which may not be read and reread with profit. Most of the articles may, indeed, be described as almost models of what the inexperienced practitioner would wish to be told, and of the way in which a senior member of the profession may best pass on the results of the experience which he has gathered to those who stand in need of it. Every operating surgeon of many years' standing must be well aware of the doubts and difficulties arising from the circumstances of his practice and the decisions with the making of which he is confronted; but not every surgeon has so clear and constant an appreciation of the psychological reaction of the patient. Papers on "How Do Patients Picture the Nature of their Malady?" on "The Prevention of Pain," and on "The Fear of Cancer," illustrate the value of such an appreciation.

Chapters of a different character are indicated by the titles "Mania Operatoria," "Operations in Patients of an Advanced Age," "The Visual Examination of Patients," and "Washing the Hands." A still further variety of questions is dealt with in those headed "The Hospital Doctor and the General Practitioner," "Collusion between Doctors," "Something Went Wrong"; and yet another under such captions as "The Doctor's Woman Assistant," "How the Doctor should Read his Weekly Journal," "The Doctor When Ill," and "Payment by One Doctor to Another." These subjects do not exhaust the contents of the book, but they indicate the wide range of kindred matter with which it is concerned. The author modestly says: "If I discuss a question concerning the mental attitude of patients it is only a matter of several perfectly innocent observations which any doctor who does not regard his profession merely as a trade might make any day"; and again, "We are not taught these little things enough in our student days. We have to learn slowly in our practice the many means by which patients can be spared mental strain"; and "A man must have reached a certain age in order to perceive that surgery is not the universal remedy for which we are often apt to take it in our youthful enthusiasm." All sorts of wisdom for the guidance of daily practice, and for the cultivation of correct judgement in emergencies will be found within the covers of this book, and just now, when the ethics and etiquette of consultation are under consideration, it might be well for all concerned to read Dr. Krecke's paper on "Is it Justifiable to Advise and Treat other Doctors' Patients?"

It was judicious to place the short biography and appreciation of the author at the end of the book rather than at the beginning, for no one can read a group of articles like these without a desire to know who was the skilled surgeon, the untiring worker, the sympathetic friend, the wise counsellor, who penned them. The conditions in which he worked and for which he wrote are German, and it is clear from several passages that the economic stress of the medical profession in Germany, and the effects of the insurance system, are less favourable than in this country, but the character of the problems, both scientific and ethical, with which a practitioner is confronted are almost startlingly similar in that country and here. The book is valuable and the translation well done.

[1] *The Doctor and His Patients.* By Albert Krecke, M.D. Translated from the second German edition of 1932 by Margaret M. Green. London: Kegan Paul and Co., Ltd. 1934. (Pp. 301. 10s. 6d. net.)

SYPHILIS

A full account of Experimental Syphilis,[2] from the earlier days in the last century, when human beings were employed for the purpose, down to modern times, when animals of many kinds—chimpanzees, catarrhines, rabbits, guinea-pigs, rats, and mice—have been much employed, is given by GASTINEL and PULVENIS. The subject is discussed from many points of view, and there are chapters given to such matters as the ways in which the infection becomes generalized, the factors that may modify its results, the curious "asymptomatic syphilis" that may be seen in rabbits or mice, the occurrence and nature of immunity to syphilis in both human beings and experimental animals, and observations on Meinecke's reaction in experimentally infected rabbits. The book is well written, and contains a deal of information; it should be in the hands of laboratory workers.

Dr. RAVAUT'S essay on a New Form of Syphilis of the Nervous System[3] deals with the detection of syphilis by the changes it produces in the cerebro-spinal fluid in the days before there is any clinical evidence to show that the central nervous system has become infected; he describes it as a biological form of neurosyphilis, which can be detected only by examining the fluid yielded by lumbar puncture, and no doubt it is comparable to the asymptomatic experimental syphilis of Gastinel and Pulvenis mentioned above. The importance of the diagnosis and treatment of neurosyphilis at the earliest possible moment need not be stressed; Dr. Ravaut deals with the whole subject clearly and at length, in all its different aspects. The book should be read by all medical practitioners interested in the early diagnosis and treatment of syphilis of the nervous system.

A good general account of the methods nowadays employed in the treatment of neurosyphilis in the Vienna clinics is given by Dr. DATTNER in his volume on the Modern Therapy of Neurosyphilis.[4] Professor Wagner-Jauregg has furnished the preface, and as is naturally to be expected the treatment of general paralysis by infection with malaria or recurrent fever is given in detail. The importance of the examination of the cerebro-spinal fluid is emphasized, and full descriptions of the correct methods of performing lumbar puncture and of examining the fluid by many laboratory procedures are described, with admirable illustrative coloured plates. The results of treatment with various drugs are set out, and the difficulties of assessing the values of the treatments recommended are fully recognized. The book will be found of value by all who are directly interested in the diagnosis and treatment of syphilis of the central nervous system.

[2] *La Syphilis Expérimentale. Etude Critique et Nouvelles Recherches.* Par P. Gastinel et R. Pulvenis. Paris: Masson et Cie. 1934. (Pp. 244; 19 figures, 4 plates. 45 fr.)

[3] *Une Nouvelle Syphilis Nerveuse. Ses Formes Cliniquement Inapparentes.* Par Paul Ravaut. Paris: Masson et Cie. 1934. (Pp. 196. 45 fr.)

[4] *Moderne Therapie der Neurosyphilis.* Von Bernhard Dattner. Wien: Verlag von Wilhelm Maudrich. 1933. (Pp. xii + 334; 36 figures; 8 coloured plates. RM. 22.)

MEAT INSPECTION

The sixth edition of Professor EDELMANN's *Meat Hygiene*,[5] revised by Drs. J. R. Mohler and A. Eichhorn, reproduces and amplifies the good features presented by an earlier issue, which we reviewed in 1917. The comparative anatomy of the meat animals is discussed, the differential characters of the various meats are set forth, and consideration is given also to methods of cooking and preservation. A substantial section is devoted to the regulations governing the meat inspection of the United States Department of Agriculture. A detailed account of inspection procedure follows, including a note on peculiarities within physiological limits. Next come in order, well and amply described, the numerous parasitic diseases of meat, together with one chapter on poultry, fish, and crustaceans, and another on food poisoning. A point in the book is the attention directed to meat products and the risk of their bacterial contamination during preparation or afterwards. In the section on slaughter, the praise accorded to the knocking hammer, as employed in America, is probably justified. We have seen it used with humanity and precision in the Chicago stockyards. The superiority of the captive bolt pistol to certain other methods of killing listed is, however, insufficiently brought out, and electrical stunning, now introduced into abattoir practice in this country, is dismissed with the remark that experiments have been made to kill animals with electricity.

The illustrations and coloured plates are of a high order, though the drawings of the flies which concern themselves with meat are not up to the general standard. The work is intended for the information of meat consumers and for the guidance of those engaged in meat inspection. We think that it will serve both these objects in a thoroughly competent manner, and we recommend it to meat inspectors and medical officers in this country as a source of full and reliable information on the subject with which it deals.

PROTOPLASM AS A COLLOID

It has long been recognized that protoplasm behaves as a fluid, and that its solid constituents are not arranged in the form of anything like a fixed structure. It is a liquid, not a solid, and often a viscous liquid such as is classed by colloid chemists among the colloid solutions, or lyophilic colloids, of which examples are furnished by watery solutions of soaps, glues, and so forth. It has commonly been supposed that the massive and complex molecule of protoplasm, or biogen molecule, if such a thing may exist, is dissolved in the water that forms the major part of its substance; or, if the idea of the biogen molecule seems too simple, one may say that protoplasm is a complex of substances of various chemical natures and in various states of aggregation, dissolved in water to form a sol while alive and liable to precipitation in the form of a gel when overtaken by death. In protoplasm and, indeed, in living tissues generally, it is the water that is commonly supposed to act as the solvent and to hold the solid constituents in colloid solution. The opposite view, however, is held by MARTIN FISCHER and MARIAN HOOKER,[6] who argue that protoplasm or, more generally, living matter, including the tissue juices like blood and lymph, is in essence a solution of water in a colloid matrix. Living cells, according to this view, are not droplets of dilute solutions in which colloid molecules (protein, fat, and carbohydrate) are suspended, but are described as lyophilic colloid systems, in which the water is dissolved in, and actually bound to, the colloid material. Protoplasm is briefly described as a base-protein-acid hydrated compound, an amphoteric electrolyte that is a solvent for water. Various applications of this revolutionary view of the constitution of living matter are made by Fischer and Hooker to such medical phenomena as oedema, acidosis, alkalosis, and the so-called permeability of living cells; they have abundant experimental methods and results to prove the correctness of their views, and argue that the physics and chemistry of dilute solutions, so long applied to the problems of living matter, should now be disregarded. They would concentrate attention on what, for lack of a better name, they call "solutions of inverse type"—solutions, that is, in which the dissolved substance is the water, the solid is the solvent.

LAW FOR THE ORDINARY CITIZEN

The plain man's ignorance of law is usually profound. This is unfortunate, for ignorance is no excuse for his breaking it. Moreover, it is no easy matter for him to ascertain the law on any given point. Legal textbooks are practically useless to him, and there are not very many good books which will explain the law to him in intelligent language. Some books of the type of *Everyman His Own Lawyer* are useful, but necessarily express themselves in general terms and attempt to cover too wide a range. *The Citizen and the Law*,[7] by "Solicitor," is without exception the best we have ever seen. One of its chief features is its vigorous detachment from the legal system, its humorous condemnation of the law's worst defects, and its wealth of illustrative anecdote. The author treats of such general subjects as litigation, the police, and dodging the law—which chiefly concerns income tax and bankruptcy—and deals at length with everyday puzzles in the field of household servants, motoring, and sport. He gives a very clear summary of the law of family relationships and of divorce. The chapter on doctors sets out shortly the law of qualification and the powers of the General Medical Council. "Solicitor" considers, rather surprisingly, that doctors charge too much. While he admits that many doctors charge moderate fees or none at all to people without means, he suggests that some check ought to exist on doctors' bills similar to that by which solicitors' charges are taxed by officers of the Court. To his statement that to defend an action brought by a medical practitioner to recover his fees is generally useless, many doctors will be able to find a reply from bitter experience. One of the most serious and common bugbears of the doctor is the patient who brings a counter-action for negligence in order to avoid a perfectly reasonable account, and such actions, owing to the usual sympathy of a jury with an ex-patient, not infrequently succeed. To appoint, as the author suggests, commissioners in every district to review doctors' bills would be an obvious and unjustifiable interference with private interests and the relationship between doctor and patient. It would be just as reasonable to have a similar tribunal to review the charges of every tradesman. Such tribunals have been set up in times of emergency, but there is no record that the results obtained were strikingly successful. Nevertheless, one can bear "Solicitor" no grudge for his opinions, which are sincerely held and add greatly to the interest of his book.

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[5] *Text-book of Meat Hygiene. With Special Consideration of Antemortem and Postmortem Inspection of Food-producing Animals.* By Richard Edelmann, Ph.D. Sixth revised edition by John R. Mohler, A.M., V.M.D., D.Sc., and Adolph Eichhorn, D.V.S. London: J. and A. Churchill, Ltd. 1934. (Pp. 474; 162 figures, 5 coloured plates. 28s.)

[6] *The Lyophilic Colloids. Their Theory and Practice.* By Martin H. Fischer and Marian O. Hooker. London: Baillière, Tindall and Cox. 1933. (Pp. 246; 84 figures. 22s. 6d.).

[7] *The Citizen and the Law.* By "Solicitor." London: George Routledge and Son Ltd. 1934. (Pp. xiii + 249; 7s. 6d. net.)

Notes on Books

PERKIN and KIPPING'S *Organic Chemistry*, Part III,[8] incorporates those matters which are not usually presented in a fundamental course of instruction in the subject. Such matters naturally include the newer developments of theory, the results of recent important research, questions which still await a complete explanation, and descriptions of organic substances of more than ordinary complexity. These are discussed in this part. They include the theory of valency, which is based on the behaviour of electrons, the relation of physical properties to molecular constitution, and various forms of geometrical isomerism. There is also a more extended treatment of the subject of optical isomerism than that given in the foregoing section of the work, together with an account of the optically active forms of nitrogen, tin, silicon, and sulphur. A considerable part of the volume is occupied with the study of certain groups of interrelated substances, among which are found the saccharides, the terpenes, and the carotenoids, but the alkaloids are not here included. Room has, however, been found for a monograph on the more remarkable forms of tautomeric change occurring in organic substances. All these matters are discussed with special regard to the needs of students intending to take the honours degree. The book has been carefully prepared, and forms a fitting supplement to Parts I and II of the authors' work.

In their little book on *Sex in Marriage*[9] Mr. ERNEST R. GROVES, research professor of sociology in the University of California, and his wife, Mrs. GLADYS H. GROVES, have attempted to give sex information to those entering marriage, in the manner and the spirit of a book for beginners in housekeeping and child nurture. The subjects discussed include the elementary anatomy and physiology of the sexual organs, the love art of husband and wife, common problems of marriage, and birth control. A short bibliography of English works is appended.

The fifth volume of the German publication on the Results of General Tuberculosis Research[10] contains much of interest for workers dealing with this disease. Three of the six contributions in the present collection deal with tuberculosis in childhood. Professor Stefan Engel has written a masterly review on "The Hilus of the Child," which closely correlates pathological and radiological findings. Professor Hans Opitz deals with the difficult question of whether children with intrathoracic tuberculosis can act as sources of infection, and concludes that there is more danger for other children than is generally realized. Dr. K. Mattison (of Sweden) discusses the fate of school children infected with tuberculosis, and covers a very wide field in the whole question of the age of infection and the resultant mortality and morbidity.

We have received a copy of the latest issue of the *Liverpool Medico-Chirurgical Journal*, vol. xlii, Part I.[11] This contains an interesting article on language, jargon, and modern medicine by Dr. Herbert R. Hurter. Two historical articles by Sir D'Arcy Power and Professor John Hay (the latter being the Commemoration Address on the Centenary of the School of Medicine) are followed by practical papers on midwifery analgesia and allergy by Drs. R. J. Minnitt and R. M. B. MacKenna, while Professor Walter J. Dilling offers a scholarly contribution on David Waldie, prophet of the anaesthetic properties of chloroform.

[8] *Perkin and Kipping's Organic Chemistry*. Part III. By F. Stanley Kipping, Ph.D., Sc.D., F.R.S., and F. Barry Kipping, M.A., Ph.D. London: W. and R. Chambers, Ltd. 1934. (Pp. 967.)

[9] *Sex in Marriage*. By Ernest R. Groves and Gladys H. Groves. With an introduction by Dr. Harry Roberts. London: Gerard Howe, Ltd. 1934. (Pp. 251. 6s. net.)

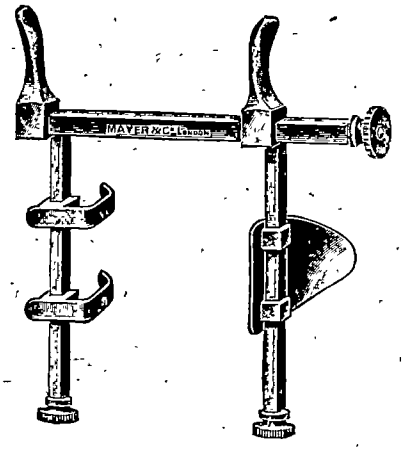
[10] *Ergebnisse der gesamten Tuberculoseforschung*. Band V. Leipzig: G. Thieme. 1933. (Pp. 427; 128 figures. M.43; geb. M.45.)

[11] *The Liverpool Medico-Chirurgical Journal*. Edited by R. Coope, M.D. Liverpool: Medical Institution; London: H. K. Lewis and Co., Ltd. 1934. (Pp. 132. 2s. 6d., published half-yearly.)

Preparations and Appliances

RETRACTOR FOR EXTERNAL FRONTAL SINUS AND ETHMOIDAL OPERATIONS

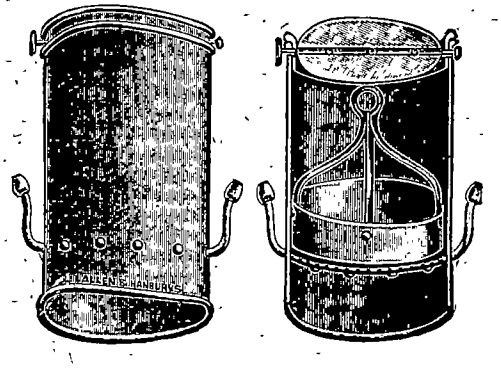
Mr. GILBERT H. HOWELLS (London, W.1) writes: The instrument described and illustrated here has proved most satisfactory in use. The broad, curved blade slips in under the orbital periosteum and retracts the orbital contents without any danger of damaging the eyeball. The two small hooks on the opposite arm slip under the integuments, and, owing to their mobility on the arm, will adapt themselves to the curve of the incision. It is made by Messrs. Mayer and Phelps, Chiron House, 59, New Cavendish Street, London, W.1.



MODIFIED ETHER INHALER

Dr. F. R. GUSTERSON (Worthing) writes: Having found Mr. Denis Browne's ether inhaler very useful for anaesthesia in children, I have modified it in the following details, and use it as a routine for adults.

1. The face end has been made wider, and the sponge rubber facepiece dispensed with, a piece of gamgee being used.
2. Two gas tubes have been inserted so that oxygen and CO_2 can be administered if necessary.
3. A lid with revolving shutter has been fitted. This enables a certain amount of rebreathing to take place, easily controlled by rotating the shutter.



I usually induce with ethyl chloride, the shutter being off. I go on as soon as possible to pure ether, the shutter being placed in position and gradually closed down. By this method the patient only breathes a warm ether vapour, a constant depth of anaesthesia can easily be maintained, and the actual amount of ether used is very small. For an abdominal operation lasting one hour, including induction, I use about 6 to 8 ounces of ether all told.

I have to thank Messrs. Allen and Hanburys for several helpful suggestions and for making this model.

HEAT-STERILIZED SURGICAL DRESSINGS

We have received from Messrs. Southall Bros. and Barclay Ltd. samples of dressings in sterilized packets which have been sealed by an ingenious new method. The dressing is packed completely, except for a small aperture which is covered by a film of resinous compound. It is then sterilized by moist heat at 125° C. The final drying process, at 130° C., causes the resinous film to adhere to the wrapper and thus to close the packet entirely. This automatic sealing during sterilization avoids any danger of contamination that may arise when packets are sealed after removal from the autoclave.

British Medical Journal

SATURDAY, SEPTEMBER 8th, 1934

INFECTION AND IMMUNITY IN TUBERCULOSIS

The discovery of "Koch's phenomenon," and a disregard of the possible fallacy of comparing man with the highly susceptible guinea-pig, undoubtedly gave origin to the belief that non-fatal infection with tubercle bacilli produced immunity against subsequent reinfection. It is admitted, however, that whilst this immunity prevents rapid generalization it is, as a result of the tuberculin hypersensitivity associated with it, responsible for the destructive form tuberculosis assumes in the chronic phthisical adult. Clinical support for this view seemed to have been obtained when severe and generalized forms were found to be the rule in adults of native races—presumably the result of lack of childhood exposure to infection. When it was demonstrated that a positive tuberculin test proved tuberculous infection it seemed reasonable to assume that a positive test also indicated immunity. Two types of pulmonary tuberculosis were thus differentiated, recently labelled "childhood" and "adult" types by the American National Tuberculosis Association. The former, which is the result of primary infection, usually occurs in children, may be localized in any part of the lung, and involves the corresponding lymph nodes; and caseous lesions usually became calcified. The process results in a positive tuberculin test, and is not uncommonly followed by generalization. The adult type, on the other hand, which is the result of reinfection (whether exogenous or endogenous), usually occurs in adults, and is apical in localization, the nodes are not involved, and caseation is followed by excavation and fibrosis.

Recent work, however, suggests that these conceptions may have to be much modified. Rich[1] has shown that tuberculin hypersensitivity and immunity can exist independently, and that hypersensitivity may be abolished while immunity persists. Research in South Africa[2] has shown that nearly 70 per cent. of the "boys" arrive at the mines tuberculin-positive, and that "a highly fatal type of combined pulmonary and 'generalized' tuberculosis" is more common among those who were positive—clinical evidence of the disappearance of immunity while hypersensitivity persists. Moreover, recent investigations among medical students and nurses indicate that the response of the adult white to a first infection also differs entirely from that of the negro. Heimbeck[3] found that nearly all the Pirquet-negative probationers—about half the number—become positive before the end of their training (during which they come in contact with over 300 tuberculous patients), and that 29.6 per cent. develop some clinical manifestation of tuberculosis, as contrasted with 2.6 per cent. in those Pirquet-positive. A very large percentage of these "manifestations"[4 5] consist of erythema nodosum and pleurisy, and "pulmonary infiltrations" appear to be of the mild childhood type. Greer[6] found that nearly all the 70 per cent. of nurses who were tuberculin-negative (Mantoux 1 in 100) on entrance became positive, but, since 1930, only three (about 2 per cent.) have developed "tuberculous disease"—two pleurisy with effusion, and one a parenchymatous lesion of adult type. Shipman and Davis,[7] on the other hand, state that the majority of the 40 per cent. tuberculin-negative nurses (Mantoux 1 in 10,000) did not become positive later, and that most of those who developed clinical tuberculosis were tuberculin-positive on entrance. They point out, however, that their nurses had little opportunity for tuberculous contact. Myers[8] finds that nearly all the tuberculin-negative medical students at Minnesota University become positive during their training, but that this is accompanied in less than 25 per cent. by symptoms or physical signs (which consist of pleural effusion and/or small x-ray shadows, which soon disappear). Reviewing the subject, he notes that adults tolerate well the first infection type of tuberculosis, and that it differs in little respect from that in children, most of whom also pass through this phase without symptoms other than a positive tuberculin reaction. Naturally a smaller number of such cases are seen in adults (in whom they are detected only by systematic routine examination), and in children miliary and meningitic forms not uncommonly follow. Myers concludes that "the development of rapidly progressive and highly destructive disease in adults who have not been previously infected is apparently a myth." His views therefore support Stewart's[9] plea for the use of the terms "first infection type" or "primary tuberculosis" and "reinfection type." The latter would probably cause less confusion at a time when the tuberculin sensitization appears to be much lower than is commonly considered.

It is essential to point out the lack of uniformity in the criteria adopted in these investigations as regards the type of tuberculin test employed, definition of clinical tuberculosis, and the opportunities for contact. The last is of great importance also in attempting to answer the question often put as to whether a tuberculin-positive or -negative child or nurse is more liable to "develop tuberculosis." According to the views quoted here the following would appear to be a "working" answer. When both are exposed to massive contagion the negative individual will almost certainly develop a symptomless or mild primary tuberculosis, which may become generalized in a child. The positive individual (child or adult) will perhaps develop

[1] *Lancet*, 1933, ii, 521.
[2] *Pub. South African Inst. of Med. Research, Johannesburg*, 1932, vol. v., No. 30.
[3] *Acta Med. Scand.*, 1930, Supplementum No. 34, p. 143; *Presse Méd.*, 1932, xl, 528; *British Medical Journal*, Epitome, 1932, ii, para. 27.
[4] *British Medical Journal*, Epitome, 1927, ii, para. 243.
[5] *Ann. de l'Inst. Pasteur*, 1929, xliii, 1229.
[6] *Arch. Int. Med.*, 1932, xlix, 77; *Trans. Nat. Tuberc. Assoc.*, New York, 1932, p. 118.
[7] *Amer. Rev. Tuberc.*, 1933, xxvii, 474.
[8] Ibid., 1933, xxix, 93.
[9] *Journ. Amer. Med. Assoc.*, 1933, c, 1077.

chronic phthisis (exogenous reinfection). This may presumably also occur later on in a primarily infected individual if the contact is prolonged. When there is no source of contagion the positive individual is at a disadvantage, as any lowering of his general or specific resistance may result in chronic phthisis (in both adult or child) owing to the presence of living bacilli somewhere in the body (endogenous reinfection). And clearly there is much more opportunity for lowering of the resistance in the adolescent than in the school child. If a primary tuberculous infection can be said to constitute an *individual* handicap—and prevention should consist in avoiding as long as possible a first infection with *virulent* bacilli—a positive tuberculin test may theoretically prove to be so in another way. B.C.G. vaccination is said to produce tuberculin hypersensitivity as well as immunity. While the vaccinated child would benefit by the prevention of generalized forms, the protected adult, who is not liable to the latter, might after vaccination be at a disadvantage when meeting his first virulent infection owing to this destructive hypersensitivity. It would be of great interest to have full individual details, in addition to numbers, of the tuberculous cases amongst Heimbeck's[3] B.C.G.-vaccinated and non-vaccinated nurses originally Pirquet-negative.

FALLACIOUS GENERALIZATIONS

It seems to us necessary to utter a word of protest about an article which appeared in a recent number of *The Listener* under the title "The Frustration of Medicine." This is the more needed in that the article was written by Professor Mottram. Anything he says is bound to have considerable weight, and should carry with it the assurance of scientific thought and accurate statement. The article in question does not confirm this assurance. Of course nothing written by Professor Mottram can be wholly without value, and in this article he points out the real need for further financial aid for medical research, illustrating this need by several excellent examples of what might be easily accomplished if adequate means were forthcoming. His main theme would seem to be the unfortunate effects of the lag in the practical application of the results of research in the medical field, and of the unscrupulous exploitation of some of those results for commercial rather than for scientific purposes. Here is a subject whose discussion might have been of great interest and value, though the reasons from which this lag arises are by no means necessarily unworthy.

Professor Mottram, however, departs widely from this main theme, and the general effect of a large part of his article on the great majority of his uninformed readers must be to produce a false impression, both as to medical education and as to the knowledge, skill, and even honesty, of general medical practitioners. Here again, of course, it has to be admitted that there are serious defects in medical education (though the standard attained in this country may be truly described as the highest in the world), and that among the many thousands of general practitioners there are a number who fail to live up to their opportunities. It is, however, unwarrantable, and may indeed be highly mischievous, to build upon these defects or exceptions such general statements as Professor Mottram makes. It is not true to say that "the academic part of the medical student's training is hopelessly inefficient"; that "in ninety-nine cases out of a hundred he sloughs his scientific training when he enters the wards"; that of "biology, chemistry, physics, physiology, and anatomy he gets but a smattering, and of their serious import nothing"; that "only when the medical student is at last in the wards does he come into contact with anything which seems even remotely connected with his life's work." Incorrect, too, is the general statement which Professor Mottram makes that "it is only by a deep critical study of a subject that a man can begin to discover the spirit of scientific work." Happily even more than a beginning can be made by something less than this, otherwise not merely medical education but all general education would be impossible in less than a life-time of study, and then only for a few. Again, as to post-graduate study in some reasonable form, Professor Mottram is unduly pessimistic. He "hails with delight" the establishment of the new post-graduate medical school at Hammersmith, but prophesies that it will be attended only by "medical officers of health whose local authorities have the wisdom to subsidize them, keen private practitioners with private means, and budding consultants." The use made even of the existing limited facilities does not justify any such forecast; and has Professor Mottram never heard of the fund which enables certain insurance practitioners, whose circumstances would otherwise make it very difficult for them, to attend post-graduate courses?

Apart from this erroneous description of the general practitioner's education and of his attitude towards advances in professional knowledge and practice, the one concrete example which Professor Mottram gives of the inadequacy of the G.P. is with regard to the use of insulin in the treatment of diabetes. He says: "The general practitioner has neither the time nor the scientific background to understand the factors at work in producing diabetes nor the relation of insulin to diet and intercurrent disease." We cannot accept this of general practitioners as a class. It is true that the initial experimentation with a view to securing the correct balance between diet and the insulin dosage must in many cases be conducted in hospital, but Professor Mottram knows that this is a relatively short business and that the conduct of these cases is as a rule successfully supervised over a period of years by the general practitioner. Again, is Professor Mottram not aware that insulin can be, and is, obtained for insured persons as readily as any other drug or preparation, and that the treatment of diabetes among such patients by insurance practitioners is a commonplace?

It is no reply to say that such treatment is unsuccessful because diabetics ultimately die.

It would be germane to inquire of Professor Mottram what is the implication of his statements that "no poor person, no one without well-to-do relatives to back him, can easily enter the medical profession: a career is not open to talent unless there is financial backing," and that "at the end of his training he is stranded . . . if he has no private means." Even in the days when scholarships were far less abundant than now these disabilities were frequently overcome; and, though the existence of certain scholarships is admitted in the article, there is no mention at all of the "senior scholarships" of local education authorities which, of recent years have been granted, in quite numerous instances, to deserving students with inadequate means to enable them to pursue a medical course. But the statements quoted have no real force unless Professor Mottram believes, as he seems to imply, that everyone who "thinks he would like to be a doctor" and has passed the necessary preliminary tests ought to be supplied from public resources with the funds to go through his medical course and to set up in practice.

THE SWAB IN DIPHTHERIA DIAGNOSIS

A remarkable diversity of opinion and practice is revealed in the correspondence recently published in these columns on the subject of diphtheria diagnosis. Its origin is the allegation by Dr. E. James, supported by Dr. Sanctuary, that the results of swab examinations are so untrustworthy that swabbing were better abandoned. This, of course, should not be so. For a false report the blame may lie either with the practitioner or with the bacteriologist; a false negative usually with the former, since its common cause is failure to apply the swab to the actual site of the lesion. The technique of swabbing is an important factor, and it should be more generally realized that the lesion in diphtheria (when it is not laryngeal or nasal) may affect only a small area on the fauces; the swab should be applied to this and this alone, and not rubbed indiscriminately over a wide area. Likewise a swab heavily contaminated with saliva should be rejected, and the process repeated with another. The false positive may have one of two chief explanations: the patient may be a carrier of diphtheria bacilli and yet be suffering from a tonsillitis due to some other micro-organism; or the bacilli cultivated, although having a typical or suspicious appearance, may be avirulent diphtheria bacilli or diphtheroids. A positive report is the only safe course in doubtful cases pending further laboratory investigation. The errors due to all these causes should not be so numerous as to lend any support to Dr. James's proposal, and the answer to his complaint is better technique both at the bedside and in the laboratory. That the swab has many other uses than the diagnosis of the doubtful acute case we are reminded in the letters of Dr. A. G. Newell and Dr. French. That the laboratory might do more than it usually does to obviate delay, especially at inconvenient hours, when the post serves poorly, and at week-ends, is probably the opinion of many. This is in part a question simply of transport, communications, and working hours; but in one respect it may be a question of technique, and if Dr. Ponder's admirable practice of examining direct films were generally followed, not only would most cases of frank diphtheria receive laboratory confirmation at once instead of on the following day, but fewer cases of Vincent's angina would go unrecognized, as unquestionably they often do at present. This proceeding, however, calls for a greater expenditure of time and a considerably higher degree of skill—if it is to yield the full results of which it is capable—than the ordinary practice of culture alone. The gravest conflict of opinion in this correspondence concerns the clinical aspect of diphtheria and the possibility of diagnosing the disease by its physical signs. The letters of Dr. A. T. Blease and Dr. Newell present a sharp contrast in this connexion, the former insisting that a diagnosis is sometimes impossible on clinical grounds, the latter emphasizing the well-known clinical points of distinction between diphtheritic and streptococcal tonsillitis. We find another divergence of opinion between the letters of Dr. P. R. Wallis and Dr. D. M. Gray: the former contends that if enough suspicion of diphtheria exists to call for a swab examination that suspicion demands the immediate administration of antitoxin; the latter recognizes a class of case in which antitoxin may be withheld until a swab report is obtained. Dr. Wallis would no doubt except from his rule the case in which a swab is only taken as a safeguard against a remote contingency; his proposal is incompatible with the suggestion that all sore throats should be swabbed. To pretend to judge between the conflicting opinions of so many experienced observers is more than we wish to undertake, except to propose the lame though obvious compromise that every case must be judged on its merits, taking into account not only the features of the case itself but the surrounding circumstances. If every practitioner devoted as much thought to this subject as the writers of these letters, it would become evident that diminishing the dangers of diphtheria is less influenced by matters of disputed clinical policy than by alertness and determination to take effective steps of some kind with the least possible delay. This whole controversy is, of course, superseded in importance by the issue introduced in the last sentence of Dr. Newell's letter. Our main business as a profession should not be to cure diphtheria but to prevent it, and if any further public health officers are to be appointed to deal with this problem, as is suggested by Dr. Crawford, prevention should be at least their chief concern. The number of children immunized in this country is still lamentably small, and much more could be done by the practitioner as well as by many public health authorities in advocating timely immunization. That this is an effective proceeding, and not merely safe but often unattended by even slight discomfort, should be preached insistently. Misguided public opinion has a lot to answer for, and in no respect is it more to blame in this country than in its attitude to all methods of immunization; between the ultra-moderns who believe in nothing unless they get it through a hypodermic needle and that large section of the population which maintains an almost religious prejudice against any sort of "inoculation" the common-sense intermediate class is still smaller than in many other countries.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, SEPTEMBER 8th, 1934

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British Medical Association

SCIENCE COMMITTEE

The Science Committee has received statements of the work done by the Association's scholars and grantees for 1933–4, together with reports on this work by the committee's visitors.

Scholarships

Leucoplakia.—Dr. E. C. Mekie (Ernest Hart Scholar) has been conducting an investigation into the aetiology and nature of leucoplakia, with special reference to its relationship to squamous epithelioma. He made a special study of the influences of tobacco and vitamin deficiency, and found that ethereal extracts of foul pipes brought about an increase in thickness of the keratin layer of the rat's buccal mucosa, thickening of the intermediate cell zone with the appearance in it of large vacuolated cells, and some subepithelial infiltration. In the absence of sepsis, and after a period of three months, hyperkeratosis was found to be present, but when there was definite sepsis the keratinized layer and the intermediate cell zone were very materially reduced in depth, the most striking change being the irregularity and downward growth of the basal cells in certain places. It is claimed, therefore, that continued irritation of the buccal mucosa by tobacco derivatives results in epithelial and subepithelial changes, which, if not identical with, closely simulate the features in certain forms of clinical leucoplakia. Similar pathological changes were induced by feeding rats with an otherwise strictly balanced diet which was completely lacking in vitamin A. A combination of the two procedures for long periods produced macroscopical evidence of mucosal thickening, but no definite signs of malignancy were observed. Dr. Mekie considers he has shown that in some measure vitamin A deficiency (by its specific action) and syphilis (possibly by impaired trophic control) are common aetiological factors which evoke the abnormal response of the mucous membrane, giving rise to leucoplakia. Professor Sydney Smith, the Association's visitor, reports that Dr. Mekie's work with deficiency dietaries, the application of horizontal retort tar to the buccal mucous membrane, and the similar use of pipe-juice extracts have produced tissue reactions which appear to be identical with leucoplakia in human beings.

Iron Therapy in Anaemia.—Dr. N. S. Plummer (Walter Dixon Scholar) has been endeavouring to estimate the part played by iron in pernicious anaemia, subacute combined degeneration of the cord, and microcytic anaemia. He states that he is proposing to follow up over 250 cases of partial gastrectomy, primarily from the point of view of anaemia and gastric secretion, but including other topics such as the recurrence of symptoms. In three cases of pernicious anaemia there were no signs of iron lack, even though the diet was iron free. The effect of dental sepsis, gastro-intestinal disturbance, and other factors in preventing a satisfactory response to liver treatment in pernicious anaemia has been studied in detail in a few cases, and this line of research is being continued. Eight cases of haemolytic anaemia of obscure origin, possibly of the acholuric jaundice type without increased fragility, are at present being carefully investigated, and others are being collected in an attempt to elucidate their aetiology. The comparative therapeutic values of the ferric and ferrous salts in microcytic anaemia are being evaluated. Professor F. R. Fraser, the Association's visitor, considers that Dr. Plummer has made considerable headway. In eighteen patients with microcytic anaemia, all but two of whom were females, the response of the red cells, haemoglobin, and reticulocytes to pil. ferri and to iron and ammonium citrate was first determined, and was compared with that due to the exhibition of liquor ferri perchloridi. In five patients a fairly satisfactory response to the preparations of ferric iron ensued, and in one instance there was a still further response when the double citrate was substituted. No digestive upsets were noted, but further patients must be examined before final conclusions can fairly be drawn.

The Pulmonary Circulation.—Dr. E. Wyn Jones is making a study of the pulmonary circulation in health and disease with a view to correlating the clinical and pathological findings. He has been devoting himself more particularly to the question of acidosis in cardiac diseases, and especially in cases of congestive failure. In a series of twenty-seven cases he found the average *p*H of the blood was 7.43; there was no marked deviation in the congestive cardiac failure group, but in all the cerebro-spinal fluid was slightly more acid than the blood. The lactic acid content of the blood was slightly above the normal in most cases, especially when there was congestive failure. Dr. Jones thinks there is evidence for the view that a high lactic acid content of the blood is a feature of failure of the right side of the heart. Patients with failure of the left ventricle showed figures more nearly approximating to the normal. Cases exhibiting dyspnoea and oedema as outstanding features tended to have a raised lactic acid reading; it appears that right ventricle failure, because of oxygen lack, leads to an accumulation of lactic acid in the blood. Dr. Jones has shown that when the congestive failure improves the lactic acid content falls. This fall was accompanied by an increase in the alkalinity of the *p*H and in the alkali reserve, as well as by a slight decrease in the venous pressure. As expected, the venous pressure readings were higher on the average in the congestive failure group, so that the venous pressure and lactic acid findings appeared to possess

certain comparable features. It is proposed to investigate later the effect of oxygen and CO_2 inhalation on the *p*H and lactic acid content, and also to consider from the same point of view the effect of standard exercise in heart cases.

Intracranial Pressure.—Dr. D. W. C. NORTHFIELD, who is engaged in work on intracranial pressure, is reported by Professor F. R. Fraser to have measured the intracranial pressure in cadavers before and during the application of distorting pressures to the skull. This has been done in a small number of cases with inconclusive results. It is proposed, therefore, to continue these observations on a larger series, and to study the incidence of petechial haemorrhages in the cerebrum following traumata to the skulls of living animals. The object of these experiments is to determine whether the symptoms of concussion cannot be more easily explained on the basis of such haemorrhages rather than on ischaemia following increased intracranial pressure.

Sterility and Sex Determination.—Dr. A. SHARMAN has been making a study of the endometrium in gynaecological disorders of a hormonal nature, with special reference to sterility. Professor Munro Kerr, the Association's visitor, reports that the subject is being approached from two standpoints. The histological character of the endometrium in women suffering from primary sterility is being examined with a view to determining the changes in the endometrium during the menstrual cycle in such women. There appears to be evidence from Dr. Sharman's work that, when ovulation does not occur, the endometrium does not undergo the marked hypertrophy characteristic of the premenstrual phase. Since this necessarily precludes the possibility of pregnancy, an examination of the endometrium in the premenstrual phase may be of diagnostic value as to whether ovulation is occurring. Tests for any excess of anterior pituitary hormone and oestrin have proved negative in these women. Dr. Sharman is also conducting hormonal studies with a view to the prediction of sex in the unborn.

Research Grants

Therapy of Anaemias.—Dr. J. H. HUGHES has been investigating the effect of porphyrin and pyrrol compounds upon toxic and haemorrhagic anaemias, with a view to preparing a therapeutic preparation for use in these diseases. It has been shown previously that in secondary anaemia due to bleeding a definite increase in blood regeneration followed the addition to a basal, chlorophyll-free diet of porphyrin groups in the form of crude commercial preparations of chlorophyll and isochlorophyllin. Negative results were obtained from this treatment in cases of toxic anaemia induced by subcutaneous injections of phenyl hydrazine. No relation was traced between the urochrome output and blood loss or regeneration. Work is continuing on the effect of a mixture of iron and aetioporphyrin on blood regeneration. The Association's visitor, Dr. J. C. Matthews, reports that, although the results of this work are negative so far, they are of definite value.

Chronic Bronchitis and Asthma.—Dr. J. B. CHRISTOPHERSON is continuing an investigation into the relationship of chronic bronchitis and asthma, making very careful *x*-ray examinations after lipiodol injections, and correlating the findings with the clinical history and physical signs. Professor F. R. Fraser states that this grantee has convinced himself that asthma and chronic bronchitis are but two aspects of a condition in which the vagus and sympathetic nervous impulses on the bronchial musculature are incoordinated, but he has not yet been able to demonstrate his conclusions satisfactorily. To this end he is accumulating a very large number of case records. His views were detailed in an article in the October (1933) issue of the *American Journal of Medical Sciences*. Dr. Christopherson has also utilized his material to study the comparative effects of ephedrine and pseudo-ephedrine in the treatment of asthma. His results have been embodied in a report to the Therapeutic Trials Committee of the Medical Research Council, and were indicated in an article in the *British Medical Journal*, June 2nd, 1934, p. 978.

Pituitary Hormone Metabolism.—Drs. W. R. HENDERSON and J. M. ROBSON have been investigating the hormone content of the anterior pituitary lobe in various pituitary disorders, with a view to correlating the hormone contents of the glands with the hormone excretion in the urine. They are also studying experimentally the relation of pituitary activity to that of the known sex hormones, with a view to determining the factors which lead to the various disturbances of the sex glands and sex cycle in cases of pituitary disorder.

Intraocular Pressure.—Dr. B. W. RYCROFT, by means of animal experiments, has been studying the variations in intraocular pressure caused by the administration of drugs that affect the vascularity of the eyeball. He has already published a note on the methods and preliminary results in the *British Journal of Ophthalmology* for March, 1934. In Professor Fraser's opinion this work fills a gap in the knowledge of the causation of acute glaucoma, and points to alterations in the state of the ocular capillaries as the immediate cause of this condition. Dr. Rycroft proposes to proceed to experiments designed to determine if such capillary changes can be produced reflexly from conditions elsewhere in the body. Professor Fraser considers that this is work of a fundamental nature that may be of considerable importance in prevention and treatment.

Lymphadenoma.—Dr. C. E. VAN ROOYEN, who is investigating the precise nature of the pathogenic agent incriminated by Dr. M. H. Gordon as the cause of Hodgkin's disease, has published two reports of his work in the *Journal* (September 23rd, 1933, and March 24th, 1934). Efforts are being made to produce an antiserum for the treatment of the condition, and also to apply any findings which appear to have therapeutic value.

Histology of Cervix Uteri.—Dr. W. C. W. NIXON has been concentrating on the microscopical examination of the cervix during pregnancy, labour, and the puerperium. He has found that in the normal organ there is always a zone of fibrous tissue in the region of the external os—the site from which small portions are always removed by obstetricians confronted with slow dilatation. It now remains to compare the distribution of fibrous tissue of the so-called rigid cervix with that of the normal. Should there prove to be an excess, the rigidity might be legitimately considered to be of fibrotic origin. Dr. Nixon denies the specificity of Prince's stain for nerve cells and fibrils, and denies that there is a subepithelial layer of nervous tissue beneath the squamous epithelium of the infravaginal portion of the cervix. He has already shown that this layer is identifiable as elastic tissue by using Sheridan's stain. He believes that there will have to be a change of view as regards the intrinsic nerve distribution in this organ. Professor F. R. Fraser thinks it probable that Dr. Nixon's results will be of real value, and will necessitate a revision of the histology of the cervix uteri.

The Pituitary Gland.—Professor W. P. KENNEDY, who now occupies the chair of biology in the Royal College of Medicine at Baghdad, has nearly completed investigations into the role of the anterior part of the pituitary body in relation to the female reproductive system. He has been more particularly concerned with variations in women in the production of anterior-pituitary hormone in health and disease, and the effect in animals of irradiation of this gland on the sex cycle and organs.

Corpus Callosum and Mental Deficiency.—Dr. R. M. STEWART, in conjunction with Dr. W. R. ASHBY, has had a paper on the corpus callosum in mental deficiency published in the *Journal of Neurology and Psychopathology*. They measured the area of the mesial cross-section of the corpus callosum in sixty-nine brains, sixty of these being from mental defectives of known mental age and nine from normal people. A significant correlation between the area of the corpus-callosum and the mental age was found. On closer analysis it seemed, however, that the change of size was simply part of the general falling off of the body size with mental age, and that there was therefore no evidence of specific correlation between the area of the corpus callosum and the mental age. The Association's visitor, Dr. J. G. GREENFIELD, states that these two investigators have now completed measurements of the cerebellar cortex in sixty-five brains. They are proceeding to study areas of the cerebral cortex. He adds that since, unfortunately, no definite evidence is available as to which part of the cerebral cortex is most affected in mental deficiency, or as to whether widely separated areas may not be affected to an equal degree, publication of their work is being delayed until further results emerge. He is satisfied that such delay is most desirable, much unsatisfactory work having been already published on this subject.

THE ROAD TRAFFIC ACT, 1934

EMERGENCY TREATMENT CLAUSES

Under the heading of "Emergency Treatment for Road Accidents" we published, on August 4th (p. 213), a leading article which dealt with certain clauses in the Road Traffic Act, 1934, of particular interest to general practitioners. The Act has now been printed,* and the full text of these emergency treatment clauses (Clauses 13 and 14 of the Bill are now Sections 16 and 17 of the Act) are reproduced below. Section 16 concerns "payments and insurance in respect of emergency treatment of injuries arising from the use of motor vehicles on the roads," Section 17 "provisions as to claims for, and supplementary provisions as to, payments for emergency treatment."

16.—(1) Where medical or surgical treatment or examination is immediately required as a result of bodily injury (including fatal injury) to any person caused by, or arising out of, the use of a motor vehicle on a road, and the treatment or examination so required (in this section referred to as "emergency treatment") is effected by a registered medical practitioner, the person who was using the vehicle at the time of the event out of which the bodily injury arose shall, on a claim being made in accordance with the provisions of the next succeeding section, pay to the practitioner, or, where emergency treatment is effected by more than one practitioner, to the practitioner by whom it is first effected—

(*a*) a fee of twelve shillings and sixpence in respect of each person in whose case the emergency treatment is effected by him; and

(*b*) a sum, in respect of any distance in excess of two miles which he must cover in order to proceed from the place whence he is summoned to the place where the emergency treatment is carried out by him and to return to the first-mentioned place, equal to sixpence for every complete mile and additional part of a mile of that distance.

(2) Where emergency treatment is first effected in a hospital (that is to say, an institution, not being an institution carried on for profit, which provides medical or surgical treatment for in-patients) the provisions of the foregoing subsection with respect to the payment of a fee shall, so far as applicable, have effect with the substitution of references to the hospital for references to a registered medical practitioner.

(3) Liability incurred under this section by the person using a vehicle shall, where the event out of which it arose was caused by the wrongful act of another person, be treated for the purposes of any claim to recover damage by reason of that wrongful act as damage sustained by the person using the vehicle.

(4) In paragraph (*b*) of subsection (1) of section thirty-six of the principal Act, the reference to liability in respect of death or bodily injury shall be deemed to include a reference to liability to make a payment under this section in respect of emergency treatment required as a result of bodily injury, and the proviso to that paragraph shall not have effect as respects liability to make a payment under this section.

17.—(1) A chief officer of police shall, if so requested by a person who alleges that he is entitled to claim a payment under the last foregoing section, furnish to that person any information at the disposal of the chief officer as to the identification marks of any motor vehicle which that person alleges to be a vehicle out of the use of which the bodily injury arose, and as to the identity and address of the person who was using the vehicle at the time of the event out of which it arose.

(2) A claim for a payment under the last foregoing section may be made at the time when the emergency treatment is effected, by oral request to the person who was using the vehicle, and if not so made must be made by request in writing served on him within seven days from the day on which the emergency treatment was effected.

(3) A request in writing must be signed by the claimant or, in the case of a hospital, by an executive officer thereof, must state the name and address of the claimant, the circumstances in which the emergency treatment was effected, and that it was first effected by the claimant, or, in the case of a hospital, in the hospital.

(4) A request in writing may be served by delivering it to the person who was using the vehicle, or by sending it in a prepaid registered letter addressed to him at his usual or last-known address.

(5) A sum payable under the last foregoing section shall be recoverable as if it were a simple contract debt due from the person who was using the vehicle to the practitioner or the hospital.

(6) A payment made under the last foregoing section to a practitioner or hospital shall operate as a discharge, to the extent of the amount paid, of any liability of the person who was using the vehicle, or of any other person, to pay any sum in respect of the expenses or remuneration of the practitioner or hospital of or for effecting the emergency treatment.

(7) A payment under the last foregoing section shall not be deemed to be a payment by an authorized insurer or owner for the purposes of subsection (2) of section thirty-six of the principal Act.

* H.M. Stationery Office. (9d. net.)

NATIONAL EYE SERVICE CENTRES

In the *Supplement* of February 18th, 1933 (p. 55), there appeared a complete list of National Eye Service centres to which patients eligible for the benefits of the service should be referred. The following are recent additions and alterations:

ADDITIONS

BUCKINGHAMSHIRE	
Beconsfield	3, Highway Court, Station Road.
CHESHIRE	
Stockport	92, Wellington Road South, Town Hall Square.
DURHAM	
Sunderland	10, St. Thomas Street.
ESSEX	
Colchester	75, Crouch Street.
Sudbury	51, Friar Street.
HAMPSHIRE	
Southampton	Hendy's Buildings, Pound Tree Road (opposite Regal Cinema).
LANCASHIRE	
Bury	Derby Chambers, Fleet Street.
Prestwich	70, Kirkhams, Bury Old Road.
MIDDLESEX	
Brentford	81, High Street.
South Harrow	204, King's Road.
NORFOLK	
Diss	Apply, The Cottage.
RADNORSHIRE	
Builth Wells	The Pharmacy.

ALTERATIONS

MIDDLESEX	
Ruislip	Delete: 78, Eastcote Road. Add: c/o The Pantiles Pharmacy.
Twickenham	Delete: 73, Richmond Road. Add: 19, Richmond Road.
LANCASHIRE	
St. Helens	Delete: 24, Hall Street. Add: 101, Church Street.
SOMERSETSHIRE	
Weston-super-Mare	Delete: Apply 34, Clarence Road. Add: 63, High Street (South).
WILTSHIRE	
Chippenham	Delete: 42, Market Place (over W. Couch, Chemist). Add: 24, High Street.

DELETIONS

LONDON	
S.E.16	198, Jamaica Road, Bermondsey.
BUCKINGHAMSHIRE	
Aylesbury	3, Church Street.
NORTHUMBERLAND	
Blyth	8, Grey Street.
PERTHSHIRE	
Perth	Room 2, 1st Floor, 178-80, High Street.

Lists of alterations and additions also appeared in the *Supplements* of April 29th (p. 190), August 12th (p. 123), September 30th (p. 178), October 28th (p. 230), December 23rd, 1933 (p. 319); March 24th (p. 116), May 12th (p. 247), June 2nd (p. 270), and July 21st, 1934 (p. 39).

DANGEROUS DRUGS ACTS: WITHDRAWAL OF AUTHORITY

The Home Secretary gives notice that he has withdrawn from Alexander Gordon Bonnyman, M.B., Ch.B., of Blaenau Festiniog, the authority granted by the Regulations made under the Dangerous Drugs Act, 1920, to duly qualified medical practitioners to be in possession of and to supply raw opium, coca leaves, and Indian hemp, and the drugs and preparations to which Part III of the Act applies, and has also directed that it shall not be lawful for Dr. Bonnyman to give prescriptions for the purposes of the Dangerous Drugs (Consolidation) Regulations, 1928. Any person supplying Dr. Bonnyman with raw opium, coca leaves, or Indian hemp, or any of the drugs or preparations to which Part III of the Act applies, or any person supplying the drugs on a prescription signed by him, will be committing an offence against the Acts.

THE INSURANCE MEDICAL SERVICE WEEK BY WEEK

Inaccurate Dispensing—A Serious Case

The report of the following case heard by a Pharmaceutical Service Subcommittee, and the subsequent action of the Ministry, is of unusual interest.

An insured person complained that a wrong medicine had been supplied to him from one of a chemist's branch shops. The medicines ordered by the doctor were mist. bismuth and tinct. belladonna. The insured person stated that after taking one dose of the latter as dispensed he became seriously ill, and that his doctor spent nearly two hours with him in the night giving him injections and draughts and applying fomentations, and called again in the early hours of the morning. He maintained that but for the attention given him by the doctor he would have died. The doctor in evidence before the Pharmaceutical Service Subcommittee said that the patient showed some of the symptoms of belladonna poisoning. It appeared from the reports of the committee's analyst and the chemist's independent analyst respectively that some other preparation than tincture of belladonna was supplied, and that, in fact, the preparation supplied was liniment of belladonna. The chemist admitted that an error in dispensing seemed to have been inadvertently made, but said in effect that precautions had been taken in his shops against such an error, tincture of belladonna and liniment of belladonna being kept quite separate from each other in the case set aside for poisons. He had always emphasized to the managers of his various shops the importance of the strictest care in the keeping of poisons. The subcommittee concluded that liniment of belladonna was inadvertently dispensed instead of the tincture prescribed, and recommended that the Department should withhold such money from the chemist as they thought fit. The Insurance Committee accepted this recommendation. Money had been withheld from this chemist on three occasions (£1 in 1927 and a similar amount in 1930) for inaccurate dispensing at different branches of his business registered under either his own name or the name of a company.

It has been decided by the Minister to withhold £20 from the moneys payable to the Insurance Committee in respect of medical benefit. This sum will be deducted from the remuneration payable to the chemist, the Minister having come to the conclusion that the case was one of which he must take a serious view.

"As Soon as Possible"

At a time when a weekly paper with a weakness for sensational placards is indulging in an attack on the Insurance Medical Service for the delectation of holiday readers, it may be well to recall a recent case in which the practitioner concerned was dealt with judicially by a Medical Service Subcommittee and not given summary treatment by the popular weekly aforesaid. The subcommittee's report of the case is as follows:

> The insured person, who had suffered for some time from phlebitis and an ulcerated leg, was attending a hospital, with the consent of the practitioner, for treatment, and it appeared that, apart from extra dressings occasionally, the only purpose for which he was attended by the practitioner was for certification. On February 26th, 1934, the insured person was taken worse and collapsed, and at about 5.40 p.m. on that day his son, who is 11 years of age, went with another lad to one of the practitioner's surgeries—that is, that at which (according to his agreement with the committee) he should have been in attendance at that time. The lad waited at the surgery for about five minutes, but as he saw no one there he returned home and reported to his mother that he had been unable to see the practitioner. His mother, realizing that medical attention was urgently necessary, sent her son again to the practitioner, instructing him on this occasion to go to the practitioner's residence. He went, and was again accompanied by his friend. He was told there that the practitioner should be at the surgery. They then went to the surgery again and saw the practitioner there. The boy told the practitioner that his father was very ill and asked him to call as soon as possible. The practitioner told the boy that it would not be possible for him to attend before 8.30 p.m. The lad returned home and reported this to his mother, and she sent at once for another doctor, who, we were informed, left his surgery and attended immediately. In the interval, however, the insured person died, and he was in fact dead before the second doctor reached the house. A sum of 8s. 6d. was paid to the second doctor for his visit. A message was then sent to the respondent practitioner informing him that the patient had died.

There was another aspect of the case relating to certification with which we are not immediately concerned, but dealing with the alleged failure of the practitioner to visit the insured person, the report of the Medical Service Subcommittee proceeds as follows:

> We are mindful of the fact that the message delivered by the boy was of the "as soon as possible" kind, and that there was nothing in the message of itself to indicate to the practitioner that there was any urgency (as undoubtedly there was) in the case. At the same time we feel that the practitioner might have been at more pains to satisfy himself on the question of urgency; the patient was one who had been under his care for the purpose of certification only, and he had not seen him for a fair interval. He received a message—admittedly not explicitly indicative of urgency—requesting his services. We should have thought that this should have been sufficient to have caused him to make inquiries, but instead of doing so he dismissed the lad without asking any questions, and (as he told us) with a promise to call not later than 8.30 p.m. While we do not draw the inference that there was a failure on the part of the practitioner to comply with the terms of service, we are not satisfied that he did all that he might have done, and we certainly think that he committed an error of judgement.

This report fairly recognizes what is an undoubted fact—that messages delivered by very young or unintelligent messengers do not succeed in conveying to the medical practitioner the fact that there is grave urgency, but that it is not unfair to expect even a busy doctor to attempt to elicit the degree of urgency within reasonable limits. It is also clear that such a tribunal as the Medical Service Subcommittee does not allow its judgement to be impaired by events—for example, the death of the patient subsequent to the message delivered to the doctor—but deals with the doctor's responsibility in the light of the information before him at the time when the message is delivered.

Don'ts for Insured Persons

A very useful little leaflet is issued by the London Insurance Committee headed with the words "A Few 'Don'ts' for Insured Persons." The following are particularly useful:

> Don't wait until you are ill before choosing your doctor. Take your card to him as soon as you get it.
>
> Don't forget to take your medical card with you when you visit your doctor.

It has recently been decided as the result of a discussion on a question raised by the Panel Committee that this little homily should be amended to read:

> Don't forget your medical card when you want the doctor.

One of the troubles with insured patients is that they are not sufficiently alive to the fact that when they need the doctor's services they should remember to produce their medical card as evidence of the fact that they are insured persons. It may perhaps be pointed out that the production of the medical card is a matter very largely in the hands of the practitioners themselves; if insured persons were trained always to produce their cards when applying for treatment, so that it became as automatic as producing a season ticket on a railway, this would become a habit which would also be observed if the patient should transfer to another doctor or find it necessary to obtain treatment away from home. It must always be remembered that, if any person in applying for treatment represents that he is an insured person, he must be given the necessary treatment, notwithstanding that he is unable to produce a medical card (the practitioner having the right to charge a returnable deposit if he has any doubts as to the title of the applicant to be treated as an insured person).

Other items on the list of "Don'ts" include:

Don't forget that if you want a certificate of incapacity you should ask for it—the doctor will decide whether you may have it.

Don't forget if you have to obtain treatment from another doctor (*a*) to make sure that he is an insurance doctor, (*b*) to tell him at once that you are an insured person, and produce your medical card, if possible.

It may be of interest to add that the London Insurance Committee recently decided to print this list of "don'ts" for insured persons in Yiddish, and that this translation is circulated with all medical cards issued to insured persons who are members of Jewish approved societies.

Correspondence

"FAMILY DOCTORS"

SIR,—In his article entitled "The Education of the Medical Student,"[1] Sir Henry Brackenbury says that three-fourths of the students will become "family doctors." There are no family doctors now. The babies, infants, and children are attended to at welfare centres, by school doctors, and district nurses, and even ordinary midwifery cases are attended in maternity homes. The G.P. is excluded from the work that he is most fitted to do. If doctors here get any children to attend, the welfare centre nurse is there at the patients' houses at once, and persuades one's staunchest patients to take their children to the welfare centres, whether the people can afford doctors or not. Surely something ought to be done about this.

Again, patients who go to the hospital are supposed to produce a letter from a G.P. This is a farce—more and more people are going direct to the hospital. For instance, a patient who can afford a doctor has abdominal discomfort. Does that patient send for a G.P. to diagnose the case? No, that patient goes direct to the hospital to have the case diagnosed—it may be appendicitis. Even if one sends a case to the hospital for an opinion, medicine is given instead of the case being referred to the G.P.

Co-operation between the hospitals and G.P.'s is rapidly becoming less. Seeing how overcrowded the hospitals are, it is a mystery why this is so. The G.P. does not even get credit for diagnosing ordinary cases, and it is certainly becoming more difficult for him to get into many houses at all.—I am, etc.,

Surrey, Sept. 1st. "G. P."

Meetings of Branches and Divisions

BRITISH GUIANA BRANCH

A meeting of the British Guiana Branch was held on May 18th, when Dr. J. A. BROWNE was in the chair and eight members were present. Dr. Browne thanked the members for the honour accorded him in electing him to the presidential chair.

Dr. E. COCHRANE, in a paper on "The Early Diagnosis of Pulmonary Tuberculosis," stressed the importance of a family history. He thought that former history of haemoptysis or pleurisy was of great significance. Dr. Cochrane dealt with the signs and symptoms of early disease, and gave a short account of the radiological aspect of diagnosis. During the discussion which followed many questions were asked regarding the points raised, and, after he had replied, the PRESIDENT, on behalf of the meeting, thanked Dr. Cochrane for his very interesting paper.

BURMA BRANCH

The annual general meeting of the Burma Branch was held at Rangoon on January 25th, when Lieut.-Colonel H. S. CORMACK, I.M.S., was in the chair and seven members were present.

The following officers were elected for 1934:

President, Lieut.-Colonel A. L. Sheppard, I.M.S. *Vice-President*, Dr. N. J. Patterson. *Honorary Secretary and Treasurer*, Dr. J. W. Lusk. *Representative in Representative Body and Delegate*, Dr. W. P. Murray. *Deputy Representative in Representative Body and Delegate*, Lieut.-Colonel Cormack.

[1] *British Medical Journal*, September 1st, p. 381.

The meeting decided that copies of letters received from the Inspector-General of Civil Hospitals, Burma, regarding the 1932 edition of the *British Pharmacopoeia* should be sent to members of the Branch for an expression of their opinion.

The meeting terminated with a vote of thanks to the retiring president.

GLASGOW AND WEST OF SCOTLAND BRANCH: GLASGOW DIVISION

A general meeting of the Glasgow Division was held at Glasgow on June 29th, when Dr. J. WALLACE ANDERSON was in the chair and thirty-one members were present. Drs. JAMES COOK, J. G. MCCUTCHEON, JAMES DUNLOP, and J. F. LAMBIE addressed the meeting concerning recent events in the public assistance department medical service. A subcommittee of the corporation's Public Health Committee had recently had before it a statement regarding the cost, etc., of the three possible methods of conducting such a service: (1) by retention of the *status quo*; (2) by a whole-time medical service; and (3) by a part-time service on a capitation basis open to all practitioners in the area—in other words, the British Medical Association scheme. The Division's subcommittee had pressed for the retention of the *status quo* if possible; failing this, for the introduction of the British Medical Association scheme. The principal argument in favour of the *status quo* was the desirability of waiting for the report of the health services committee now sitting weekly in Edinburgh. The Division's subcommittee had been most favourably received, and was given the impression, if not the specific guarantee, that no steps would be taken to alter the *status quo* without first informing the Association of the proposed changes.

The result of the first stage of the Treasurer's Cup golf competition was announced as follows: winner, Dr. James Sommerville; runner-up, Dr. Dugald Baird.

NYASALAND BRANCH

The annual dinner of the Nyasaland Branch was held at Ryall's Blantyre Hotel on June 9th, when the president, Dr. R. CALLEJA, and Mrs. Calleja welcomed guests to the number of close on 100. An excellent dinner was served, and after the loyal toast had been honoured Dr. Calleja gave a short review of the part played by modern medicine in the life of the average man from pre-natal times to the grave. At the close of his speech he complimented Dr. W. L. Gopsill, secretary of the Branch, on the splendid organization of the dinner, and then transferred the presidential duties to Dr. H. M. Shelley. In response to calls for a speech Dr. SHELLEY said that when he came to Nyasaland ten years ago there was no Branch of the British Medical Association in the Protectorate. He thought that such a state of affairs should be remedied, and he set about the formation of a Branch, with happy results. He was very proud of the honour which had been conferred upon him, and candidly admitted that he had looked forward one day to occupying the presidential chair. He paid a warm tribute to the work of Dr. Calleja in office, and to his professional abilities and his broad kindliness. Dr. GOPSILL proposed the toast of "The Guests," and Judge MOSELEY replied in a witty speech. Following the dinner a very enjoyable dance was held.

The annual meeting of the Branch was held at Blantyre earlier in the day, when Dr. CALLEJA presided over a representative gathering. Papers were given by Professor J. G. THOMSON, the distinguished authority on malaria visiting the the Protectorate, on "Recent Advances in the Treatment of Malaria"; by Dr. SHELLEY on "Aetiology of Pellagra"; and by Dr. GOPSILL on "Bilharzia."

The following officers were elected for the ensuing year.

President, Dr. Shelley. *President-Elect*, Dr. A. D. J. B. Williams, O.B.E. *Secretary*, Dr. E. J. Blackaby.

SOUTH-WESTERN BRANCH

The ninety-fifth annual general meeting of the South-Western Branch was held at Bideford on June 20th, when the president, Dr. C. LINDSAY, was in the chair and thirty-two members were present.

The report of the Branch Council for 1933–4, and the financial statement for 1933, were read and unanimously adopted.

The following officers were elected:

President, Mr. Ellis Pearson. *President-Elect*, Dr. G. F. Burnell. *Honorary Secretary and Treasurer*, Mr. P. D. Warburton.

Dr. Lindsay then resigned the chair in favour of Mr. Pearson, who was received with acclamation. Mr. PEARSON

said how much he appreciated the honour paid him by the Branch. He then proposed that a hearty vote of thanks be accorded the retiring president for his services, and that he be created a vice-president of the Branch. This was carried with acclamation, and Dr. LINDSAY replied.

Mr. PEARSON then delivered his inaugural address on "Oseteopathy." He pointed out how for centuries Europe had been learning and building up sound and scientific facts concerning the human body in health and disease, and had given to the world a common fund of knowledge to which all who wished might have access. In America an unprecedented rapid expansion of population over an enormous territory had created a demand for doctors long before there existed facilities for their proper training, and as a result it was the home of the sectarian. One of the sects was the osteopathic, from which more recently had sprung the chiropractic practitioner. The osteopath claimed the right to treat every disease, and must not be confused with the bone-setter and the manipulator.

SURREY BRANCH

The twenty-first annual meeting of the Surrey Branch was held at Richmond Town Hall on July 4th, when Dr. F. A. BELAM, and afterwards Lieut.-Colonel E. V. HUGO, C.M.G., I.M.S. (ret.), was in the chair and fifty members were present. The Deputy Mayor of Richmond, in the absence of the Mayor owing to a previous engagement, attended and extended a welcome to the members.

The following officers were elected:

President, Lieut.-Colonel Hugo. *President-Elect,* Dr. C. S. Crichton. *Vice-Presidents,* Drs. Vaughan Pendred and Belam. *Honorary Secretary and Treasurer,* Mr. N. E. Waterfield. *Honorary Auditor,* Colonel W. G. Hamilton, I.M.S. (ret.).

Lieut.-Colonel HUGO read an interesting paper giving an account of his experiences while in charge of the medical arrangements at an outpost in the Swat Valley.

Before the meeting members were entertained to luncheon by the Richmond Division. In the afternoon some members and their guests attended the Kew Observatory, by kind invitation of Dr. Whipple, the superintendent, while others went to the Star and Garter Home at the invitation of Lieut.-Colonel E. L. Gowlland, D.S.O., the commandant. Later tea was taken on the lawns of Buccleuch House, by invitation of Dr. Henrietta K. Trevithick. The annual dinner was held at Richmond Hill Hotel, and about fifty members and guests were present.

SUSSEX BRANCH: BRIGHTON DIVISION

On June 13th members of the Brighton Division visited the Hounslow laboratories of Messrs. Parke, Davis and Co. The journey was made by coach, and on arrival lunch was taken in the company's dining hall with the management and departmental chiefs. After lunch there was a tour of the laboratories in small parties, under the guidance of one of the firm's chemists, and members were able to see many familiar preparations in the making, and to witness the final wrapping and packing. After tea Mr. DELISLE GRAY expressed the thanks of the Division for a most enjoyable and instructive day's outing, and reciprocated the cordial expressions of welcome with which the visitors had been received by the firm. Each member of the party received a small souvenir on leaving the laboratory.

YORKSHIRE BRANCH: SHEFFIELD DIVISION

The Sheffield Division held a luncheon on July 5th in honour of the successful students at the recent final examinations. The chairman, Dr. JAMES CLARK, presided, and the guests included Dr. J. W. Applegate, president of the Yorkshire Branch, Professor J. W. Edington, and Dr. A. Pool. After the loyal toast had been honoured, Dr. D. C. BARRON proposed "Our New Colleagues." He said it was important that they should all learn to regard themselves as colleagues rather than as rivals in a hostile sense. There had been a great improvement in the profession in this matter, and he attributed it, in part at least, to the introduction of national health insurance. This had helped to weld the profession together by bringing home to them the fact of their common interests. Dr. Barron alluded to the prominent part taken by the British Medical Association when national health insurance was introduced. He said he had started in practice before the days of health insurance, and he had no doubt as to the improvement it had brought about in their working conditions. It was largely through the Association that that desirable result had been achieved. The B.M.A. was not merely an association of general practitioners; it kept in touch with every branch of medical work. When one went abroad one realized how much better was the position of the qualified practitioner in this country than in any other.

Dr. MORRIS BRODY responded in a humorous speech.

Dr. T. LODGE, also one of the graduates, proposed "The University Staff." He referred to the special advantages provided by the Sheffield Medical School, and hoped that the high standard of teaching maintained there would soon become more generally recognized. Professor EDINGTON, responding on behalf of the staff, pointed out that, as compared with the larger medical schools, the smaller number of students permitted of more intimate relations between students and teachers. He wished them all success in their future careers.

Dr. MACKINNON, in proposing the health of the chairman, said how much they appreciated the fact that, in spite of his multifarious duties, he had found time to interest himself in the work of the Association. The arrangements for a most successful meeting were carried out by Mr. A. W. Fawcett, assistant honorary secretary of the Division.

POST-GRADUATE COURSES AND LECTURES

SEPTEMBER AND OCTOBER, 1934

The following post-graduate courses and lectures to be held in London during September and October have been notified to the British Medical Association. Further particulars may be obtained direct from the hospital concerned, or, in the case of arrangements made by the Fellowship of Medicine (F.M.), from the Secretary of the Fellowship at 1, Wimpole Street, W.1.

Subject	Date	Place of Meeting	Nature of Instruction
Anaesthetics	From Sept. 1	West London Hosp. Post-Grad. College, Hammersmith Rd., W.6	Course
Chest Diseases	Sep. 24–29	Brompton Hospital, Fulham Rd.	F.M. course
Children's Diseases	Sept. 3–15	Infants Hospital, Vincent Sq.	" "
General ...	Sep. 17–29	Westminster Hospital, S.W.1	" "
Medicine ...	Sept. 4	11, Chandos Street, W.1	F.M. lecture-demonstration on pleural pain
"	Sept. 11	" "	Ditto on chronic cough
"	Sept. 18	" "	Ditto on hemiplegia
"	Sept. 25	" "	Ditto on paraplegia
Proctology...	Sep. 24–29	Gordon Hospital, Vauxhall Bridge Road, S.W.1	F.M. course
Urology ...	Sept. 8	National Temperance Hospital, Hampstead Road, N.W.1	F.M. lecture-demonstration
Anaesthetics	From Oct. 1	West London Hosp. Post-Grad. Coll., Hammersmith Rd., W.6	Course
Cardiology	Oct. 8–20	National Hospital for Heart Diseases, Westmoreland St., W.1	F.M. course
Chest Diseases	Oct. 27–28	Brompton Hospital, Fulham Road, S.W.3	" "
Children's Diseases	Oct. 1–13	Queen's Hospital, Hackney Road, E.2	" "
"	Oct. 22–Nov. 3	Hospital for Sick Children, Great Ormond Street, W.C.1	Course
Dermatology	Oct. 1–27	St. John's Hospital, 49, Leicester Square, W.C.2	F.M. course
General ...	Oct. 8–21	Metropolitan Hospital, Kingsland Road, E.8	" "
Gynaecology	Oct. 22–Nov. 3	Chelsea Hospital for Women, S.W.3	" "
Infectious Diseases	Oct.–Dec.	North-Eastern Fever Hospital, N.15	Course in fever hospital administration*
Medicine ...	Oct. 13	National Temperance Hospital, Hampstead Road, N.W.1	F.M. lecture-demonstration
"	Oct. 2	Medical Society of London, 11, Chandos St., W.1	Ditto on tremor
"	Oct. 9	" "	Ditto on ataxia
"	Oct. 16	" "	Ditto on giddiness
"	Oct. 23	"	Ditto on convulsions
"	Oct. 30	" "	Ditto on headache
Neurology	Oct. 29–Nov. 3	West End Hospital for Nervous Diseases, 73, Welbeck St., W.1	F.M. course
Ophthalmology	Oct. 15–Nov. 3	Royal Westminster Ophthalmic Hospital, W.C.2	" "
Pathology ...	Oct. 8–13	Hospital for Sick Children, Great Ormond Street, W.C.1	Course
Physical Medicine	Oct. 1–27	London Clinic, Ranelagh Road, S.W.1	F.M. Course
Psychotherapy	From Oct. 1	Institute of Medical Psychology, 6, Torrington Place, W.C.1	Course
Surgery ...	Oct. 20–21	Royal Albert Dock Hospital	F.M. course of clinical surgery

* Inquiries to be made to Medical Officer of Health, L.C.C., Public Health Department (Special Hospitals), Victoria Embankment, E.C.4.

Courses in general hospital practice may be begun at any time, and may be taken for any period, at the West London Hospital Post-Graduate College, Hammersmith Road, W.6.

In addition to the above courses the following for the higher qualifications have been arranged.

Subject	Date	Place of Meeting	Degree or Diploma
Medicine ...	Sep.-Oct.	Guy's Hospital Medical School	M.R.C.P.
"	"	King's College Hospital Medical School	"
Pathology ...	Sept.	University College Hospital Medical School	M.B., B.S.
Surgery ...	From Sept. 3	St. Mary's Hospital Medical School	Primary F.R.C.S.
"	"	London Hospital Medical College	" "
"	Sept.–Nov.	Guy's Hospital Medical School	Primary and Final F.R.C.S.
"	From Sept.	St. Bartholomew's Medical College	" "
"	"	St. Thomas's Hospital Medical School	" "
"	Sept. 25–Oct 30	National Temperance Hospital	Final F.R.C.S. (F.M.)
"	Sept. 27–Nov. 1	" "	" "
"	From Sept.	London Hospital Medical College	Final F.R.C.S.
"	From Sept.	Dreadnought Hospital, Greenwich	" "
"	From Sept. 10	King's College Hospital Medical School	" "
"	Sept.	University College Hospital Medical School	M.S. or F.R.C.S.
Bacteriology	From Oct.	London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1	Dip. Bact.
Nose, Ear, and Throat	Oct. 1–27	Central London Throat, Nose and Ear Hospital, Gray's Inn Road, W.C.1	D.L.O.
Ophthalmology	From Oct. 15	Royal Eye Hospital, St. George's Circus, S.E.1	D.O.M.S.
"	From Oct.	Royal London Ophthalmic Hospital, City Road, E.C.1	"
Public Health	From Oct. 1	London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1	D.P.H.
"	From Oct.	Royal Institute of Public Health, 23, Queen Sq., W.C.1	D.P.H.
Radiology ...	From Oct. 8	Cancer Hospital, Fulham Rd., S.W.3	D.M.R.
Surgery ...	From Oct. 22	King's College	Primary F.R.C.S.
Tropical Medicine	From Oct. 1	London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1	D.T.M. and H.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole Street, W.—*Infants Hospital*, Vincent Square, S.W.: Course in Infants' Diseases, afternoons. *Medical Society of London*, 11, Chandos Street, W.: Tues., 2.30 p.m., Lecture Demonstration, illustrated by cases, by Dr. Clark-Kennedy, on Chronic Cough. *Panel of Teachers:* Individual clinics in various branches of medicine and surgery available daily. Courses, clinics, etc., arranged by the Fellowship are open only to members and associates.

LIVERPOOL UNIVERSITY CLINICAL SCHOOL ANTE-NATAL CLINICS.—Royal Infirmary: *Mon.* and *Thurs.*, 10.30 a.m. Maternity Hospital: *Mon., Tues., Wed., Thurs.*, and *Fri.*, 11.30 a.m.

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

Surgeon Commanders G. E. D. Ellis, O.B.E., to the *Victory*, for Royal Naval Barracks; H. L. Douglas to the *Pembroke*, for Royal Naval Barracks; G. Kirker to the *Drake*, for R.M. Infirmary, Plymouth.

Surgeon Lieutenant Commanders E. B. Pollard, J. C. Souter, J. W. Cussen, R. G. Anthony, D. C. Drake, E. J. K. Weeks, J. C. Gent, and A. A. Pomfret to the *President*, for course; C. Keating to the *Pembroke*, for Royal Naval Barracks, September 10th, and to the *President*, for course, September 27th; C. H. Birt to the *Pembroke*, for Royal Naval Hospital, Chatham, for course; W. F. Walsh to the *St. Angelo*; T. W. Froggatt to the *Godetia*.

Surgeon Lieutenants B. S. Lewis to the *Dolphin*; S. R. G. Pimm to the *Victory*, for Haslar Hospital, for course; J. L. S. Coulter to the *Centurion*; M. J. Brosnan to the *Fowey*; D. B. Jack to the *Bideford*.

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Lieutenant H. A. M. Whitby to be Surgeon Lieutenant Commander.

Surgeon Lieutenants J. D. Simpson to the *Vernon*; W. D. M. Millar to the *Victory*, for Royal Naval Barracks; K. W. Martin to the *Victory*.

Probationary Surgeon Sublieutenants D. Shute to the *Pembroke*; P. M. Inman to the *Effingham*; J. Scott to the *Drake*, for Royal Naval Barracks.

ROYAL ARMY MEDICAL CORPS

Lieut.-Col. R. C. Hallowes, D.S.O., retires on retired pay.
Major L. T. Poole, D.S.O., M.C., to be Lieutenant-Colonel.
Major L. A. B. Moore relinquishes his temporary commission.

REGULAR ARMY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Lieut.-Cols. L. G. Gibson, F. L. Bradish, D.S.O., and W. C. Smales, D.S.O., O.B.E., having attained the age limit of liability to recall, cease to belong to the Reserve of Officers.

TERRITORIAL ARMY

ROYAL ARMY MEDICAL CORPS

Major S. J. C. Holden to be Lieutenant-Colonel.
Captain R. McD. Cairns resigns his commission.
Lieutenant S. G. French resigns his commission.
R. M. Allardyce to be Lieutenant.

INDIAN MEDICAL SERVICE

Major F. Oppenheimer to be Lieutenant-Colonel.
The services of Captain H. W. Farrell are placed temporarily at the disposal of the Government of Bihar and Orissa as from July 16th.

British Medical Association

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE
TAVISTOCK SQUARE, W.C.1

Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate Westcent, London).
MEDICAL SECRETARY (Telegrams: Medisecra Westcent, London).
EDITOR, BRITISH MEDICAL JOURNAL (Telegrams: Aitiology Westcent, London).
Telephone numbers of British Medical Association and British Medical Journal, Euston 2111 (internal exchange, four lines).

SCOTTISH MEDICAL SECRETARY: 7, Drumsheugh Gardens, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 24361 Edinburgh.)
IRISH MEDICAL SECRETARY: 18, Kildare Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 62550 Dublin.)

Diary of Central Meetings

SEPTEMBER

11 Tues. Standing Ethical Subcommittee, 2.15 p.m.
20 Thurs. Insurance Acts Committee, 11.30 a.m.
27 Thurs. Medical Students and Newly Qualified Practitioners Subcommittee, 3.30 p.m.

OCTOBER

26 Fri. Public Health Committee, 2 p.m.

CURRENT NOTES

Cheshire Ante-natal Scheme

Reference was made in the *Supplement* of April 7th, 1934 (p. 139), to the Cheshire County Council's scheme for the ante-natal examination by general practitioners of women referred to them by midwives. The county council has now approved the extension of this scheme to doctors' cases, provided that the women are the uninsured wives of insured men or are of a similar social status.

Association Notices

BRANCH AND DIVISION MEETINGS TO BE HELD

DERBYSHIRE BRANCH: BUXTON DIVISION.—At Devonshire Royal Hospital, Buxton, Tuesday, September 11th, 8.15 p.m. Mr. H. Osmund Clarke: "Treatment of Fractures in General Practice."

DIARY OF SOCIETIES AND LECTURES

PADDINGTON MEDICAL SOCIETY.—At Great Western Royal Hotel, W., *Tues.*, 9 p.m. Dr. L. Zeitline: Medical Humour.

VACANCIES

ASHTON-UNDER-LYNE: DISTRICT INFIRMARY.—H.S.
BIRKENHEAD GENERAL HOSPITAL.—C.O. (male).
BIRMINGHAM: CHILDREN'S HOSPITAL.—R.A.M.O.
BIRMINGHAM CITY.—J.A.M.O. (male, unmarried) at Monyhull Colony Certified Institution.
BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.—H.S.
BIRMINGHAM AND MIDLAND SKIN HOSPITAL.—Clinical Assistants in the Out-patient Consulting Room.
BLACKBURN: ROYAL INFIRMARY.—R.H.P. (male).
BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—R.M.O. (male).
BRIGHTON: LADY CHICHESTER HOSPITAL, HOVE, FOR FUNCTIONAL NERVOUS DISEASES.—Senior H.P. (female).
BRIGHTON: ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—H.S. (male).
BURNLEY COUNTY BOROUGH—Dental S.
BURY INFIRMARY, Lancs.—H.S. to Special Departments.
CANTERBURY: KENT AND CANTERBURY HOSPITAL.—H.S. (male).
CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street, W.C.—Assistant S.
CENTRAL LONDON THROAT, NOSE AND EAR HOSPITAL, Gray's Inn Road, W.C.—Two Second Assistants in the Out-patient Department.
CHELTENHAM GENERAL AND EYE HOSPITALS.—H.P. (male, unmarried).
CHESTER: EAST LANCASHIRE TUBERCULOSIS COLONY, Barrowmore Hall, Great Barrow.—H.S. (male).
COVENTRY AND WARWICKSHIRE HOSPITAL.—R.C.O. (male).
DERBY: DERBYSHIRE ROYAL INFIRMARY.—(1) H.S. for General Surgery and Ear, Throat, and Nose Department. (2) C.O. and Orthopaedic H.S.
DEVONPORT: ROYAL ALBERT HOSPITAL AND EYE INFIRMARY.—Assistant H.S. (unmarried).
DEWSBURY AND DISTRICT GENERAL INFIRMARY.—H.S.
EGYPTIAN GOVERNMENT.—M.O. (female) for Girls' Schools under Ministry of Education.
EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—H.P. (male).
EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Senior H.S. (male).
GRANGE-OVER-SANDS: WESTMORLAND SANATORIUM.—H.P.
GREAT YARMOUTH GENERAL HOSPITAL.—H.S. (male, unmarried).
HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, Haverstock Hill, N.W.—Casualty M.O. (female, unmarried) at the Out-patient Department, Bayham Street, N.W.
HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) H.P. (2) H.S. Males, unmarried.
HOSPITAL OF ST. JOHN AND ST. ELIZABETH, Grove End Road, N.W.—R.H.S. (male).
HULL ROYAL INFIRMARY.—Third H.S. (male).
HULL: VICTORIA HOSPITAL FOR SICK CHILDREN.—(1) R.H.P. (2) R.H.S. Females.
INFANTS HOSPITAL, Vincent Square, S.W.—H.P.
KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL.—H.S. (male).
LEIGH INFIRMARY, Lancashire.—R.H.S. (male, unmarried).
LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—C.O. (male).
LIVERPOOL ROYAL INFIRMARY.—Three H.S. for Special Departments.
LUTON: BUTE HOSPITAL.—H.S. (male).
MANCHESTER: ANCOATS HOSPITAL.—(1) Whole-time Assistant Pathologist. (2) R.M.O. (3) H.P. (4) Medical Registrar.
MANCHESTER ROYAL EYE HOSPITAL.—J.H.S.
MANCHESTER ROYAL INFIRMARY.—Part-time J.A.M.O. (non-resident) in the Radiological Department.
MANCHESTER: ST. MARY'S HOSPITALS.—(1) Two H.S. at Whitworth Street West Hospital (Maternity). (2) Three H.S. at Whitworth Park Hospital (Two for Gynaecological and one for Children's Departments).
MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.—H.S.
MARGATE AND DISTRICT GENERAL HOSPITAL.—R.M.O. (male).
MARGATE: ROYAL SEA-BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Visiting S. for Ear, Nose, and Throat cases.
MARKET DRAYTON: CHESHIRE JOINT SANATORIUM.—R.A.M.O.
MERTHYR GENERAL HOSPITAL.—H.S.
MEXBOROUGH: MONTAGU HOSPITAL.—J.H.S.
MIDDLESEX COUNTY COUNCIL.—J.A.R.M.O. at North Middlesex County Hospital.
NATIONAL TEMPERANCE HOSPITAL, Hampstead Road, N.W.—R.M.O. (male).
NELSON HOSPITAL, Merton, S.W.—R.H.S. (male, unmarried).
NEWMACHAR: ABERDEEN CITY MENTAL HOSPITAL, Kingseat.—J.A.M.O. (male).
NORTHAMPTON GENERAL HOSPITAL.—(1) H.P. (2) Two H.S. (3) H.S. to Ear, Nose, and Throat Department. (4) C.O. Males.
NORWICH: NORFOLK AND NORWICH HOSPITAL.—(1) C.O. and H.S. (2) H.S. to Special Departments (Ear, Nose, and Throat, and Ophthalmic). (3) H.S. Males.
NOTTINGHAM: CHILDREN'S HOSPITAL.—R.H.P. (female).
NOTTINGHAM: CITY MENTAL HOSPITAL.—J.A.M.O. (male, unmarried).
OXFORDSHIRE COUNTY COUNCIL.—Assistant County M.O.
PLYMOUTH: CENTRAL HOSPITAL.—H.S.
PRINCESS BEATRICE HOSPITAL, Richmond Road, S.W.—(1) R.M.O. (2) H.P. and C.O. (3) H.S. and C.O. Males.
PRINCESS ELIZABETH OF YORK HOSPITAL FOR CHILDREN, Shadwell, E.—(1) H.P. (2) C.O.
QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone Road, N.W.—(1) R.A.M.O. (male). (2) District R.M.O.
RADIUM INSTITUTE, Riding House Street, W.—H.S. (unmarried).
RICHMOND, SURREY: ROYAL HOSPITAL.—J.H.S. (male, unmarried).
ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Anaesthetic Registrar (female).
ROYAL NAVAL DENTAL SERVICE.—Three Vacancies as Dental Officer.
ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—H.S. (male).
ROYAL NORTHERN HOSPITAL, Holloway, N.—(1) H.S. (2) Obstetric H.S.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, Broad Street, W.C.—Registrar.
ST. BARTHOLOMEW'S HOSPITAL, E.C.—Whole-time Registrar in Cancer Department.
ST. HELENS HOSPITAL.—J.H.S. (male).
ST. LEONARDS-ON-SEA: THE BUCHANAN HOSPITAL.—J.H.S. (female).
ST. MARY'S HOSPITAL, W.—Hon. P. to the Department for Diseases of the Skin.
SALFORD ROYAL HOSPITAL.—(1) Two H.S. (2) C.H.S. Males.
SALVATION ARMY MOTHERS' HOSPITAL, Clapton, E.—J.R.M.O. (female).
SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—H.S.
SCARBOROUGH HOSPITAL AND DISPENSARY.—H.S. (female).
SHREWSBURY: ROYAL SALOP INFIRMARY.—R.H.P. (male).
SOUTHEND-ON-SEA GENERAL HOSPITAL.—H.S. (male).
STOKE-ON-TRENT: BURSLEM, HAYWOOD AND TUNSTALL WAR MEMORIAL HOSPITAL, Burslem.—Senior H.S.
SUNDERLAND: CHILDREN'S HOSPITAL.—H.S. (female).
WAKEFIELD CITY.—J.A.M.O.
WARRINGTON INFIRMARY AND DISPENSARY.—Third Resident (male, unmarried).
WATERFORD COUNTY COUNCIL.—Temporary County M.O.H. and School M.O.
WEIR HOSPITAL, Grove Road, Balham, S.W.—Senior R.M.O. (male, unmarried).
WEST LONDON HOSPITAL, Hammersmith, W.—(1) H.P. (2) H.S. (3) H.S. for Throat, Nose, and Ear Department. Males.
WINDSOR: KING EDWARD VII HOSPITAL.—H.S.
WINSLEY SANATORIUM, near Bath.—Whole-time A.R.M.O. (male).
WORTHING HOSPITAL.—H.S.
YORK: YORKSHIRE CHILDREN'S ORTHOPAEDIC HOSPITAL, Kirby Moorside.—H.S.

CERTIFYING FACTORY SURGEONS.—The following vacant appointments are announced: Erith (Kent), Wolverton (Bucks), Tavistock (Devon). Applications to the Chief Inspector of Factories, Home Office, Whitehall, S.W.1, by September 18th.

MEDICAL REFEREE UNDER THE WORKMEN'S COMPENSATION ACT, 1925, for the Oldham County Court District (Circuit No. 5). Applications to the Private Secretary, Home Office, Whitehall, S.W.1, by September 22nd.

This list is compiled from our advertisement columns, where full particulars are given. To ensure notice in this column advertisements must be received not later than the first post on Tuesday mornings. Further unclassified vacancies will be found in the advertising pages.

APPOINTMENTS

GIBB, C. de W., F.R.C.S.Ed., Honorary Ear, Nose, and Throat Surgeon, Gloucestershire Royal Infirmary and Eye Institution, Gloucester.

STRÖM-OLSEN, Rolf, M.D., B.Ch., B.Sc., D.P.M., Medical Superintendent East Ham and Southend Joint Mental Hospital.

CERTIFYING FACTORY SURGEONS.—A. McD. Macgregor, M.B., Ch.B. Glas., for the Epworth District (Lincolnshire); J. W. Maclean, *M.C.*, M.B., Ch.B.Glas., for the Newton Stewart District (Wigtownshire); G. Foster Smith, M.B., B.S.Durh., for the Loughton District (Essex); H. T. S. Wise, M.R.C.S., L.R.C.P., for the Chesham District (Buckinghamshire).

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTH

MACMILLAN.—On August 28th, at 39, Palmerstone Place, Edinburgh, to Peggy (née Scott), wife of Dr. John C. Macmillan, Kinloch Crag, Bo'ness, a son.

GOLDEN WEDDING

DAVIES—ALLAN.—On September 3rd, 1884, at St. Stephen's Parish Church, Bow, London, by the Rev. F. J. Tory, M.A., John Charles Davies, M.D., eldest son of Benjamin Davies, J.P., and Mrs. Davies, Pant, Ruabon, to Annie, daughter of William Allan, Esq., Professor of Engineering, Imperial Chinese Arsenal, Pagoda Anchorage, Foo Choo, China, and Mrs. Charlotte Allan.

ENGAGEMENT

POWELL TUCK—PITT.—The engagement is announced between Dr. Geoffrey A. Powell Tuck, the youngest son of Mrs. A. Powell Tuck of Coventry, and Miss Molly Pitt, the youngest daughter of Dr. and Mrs. F. C. Bruerton Pitt of Birmingham.

DEATHS

DAIN.—On September 3rd, at Highmead, Aberdovey, Flora Elizabeth, wife of H. Guy Dain of Bournbrook House, Selly Oak, Birmingham.

LOWENTHAL.—On August 14th, at Bognor Regis, Sussex. Louis Lowenthal, M.D.Chicago, M.R.C.S., L.R.C.P., of 344, Finchley Road, Hampstead, aged 58, dearly beloved husband of Frida Lowenthal. (American papers please copy.)

Printed and published by the British Medical Association, at their Office, Tavistock Square, in the Parish of St. Pancras, in the County of London.

BIOGRAPHY IN MEDICAL HISTORY

Of the six main articles in the July instalment of the *Annals of Medical History*[1] three deal with biography and three more or less with the wider aspects of the evolution of ideas, thus holding a balance on the question whether information about individual leaders and prominent members of the profession, or the progress of medical science, or both combined, should be the real object and ideal use of medical history. Thus baldly stated it is clear that medical history should be primarily devoted to consideration of fundamental principles and the development of ideas. But this is not all; the record of a man's life may be small beer and gossip, which, however attractive to the casual reader, is not of any permanent value, whereas the biography of a Hunter, Harvey, Pasteur, Lister, or a Virchow may describe and explain the birth and gradual growth of new conceptions and solid discoveries. In the case of science it would not be impossible to expand Thomas Arnold's definition of history generally as the biography of nations. The personal interest may be combined with the history of the achievements initiated or furthered by the individual. Thus the first article in this number of the *Annals*, that by Dr. Birkhaug of Paris on Albert Léon Charles Calmette, which may be included among the three of a biographical character, sets out the record of his work on tuberculosis, the history of the Bacillus Calmette-Guérin (B.C.G.), the invention and success of antivenin serum, and his recent work on cobra venin and its cytolytic action, with its possible application to human malignant disease. The graphic account of his persecution by the Germans when they captured Lille shows that there is an exception to prove the rule that science has no frontier boundaries. In contrast to this are the lives of two American practitioners, eminent in their, but not in all, time. The first, Walter Brashear, was a brilliant surgeon who, after an adventurous visit to China, declined a chair of surgery in Paris and retired thirty-six years before his death at the age of 84 in 1860 in order to make a fortune, first in politics, then in trade and planting in Louisiana, and was never a writer or a teacher. Dr. Guy Hinsdale's biographical note on the second, J. P. Moorman, gives the details of a resident physician at the White Sulphur Springs, Virginia, for the long period of forty-five years; he sat for two terms in the Virginia House of Delegates and for forty-five years was an elder in the Presbyterian Church. In his article on men and events in the history of the Philadelphia Pathological Society Dr. David Riesman combines many thumb-nail sketches of its presidents and of a few honorary members with a review of the changes that pathology has gone through in three-quarters of a century. Of one honorary member he says: "Virchow did for pathology what Vesalius did for anatomy." The influence of the Paduan professor's *De Humani Corporis Fabricâ* on anatomy can be judged by Dr. W. T. Dempster's account of European anatomy before Vesalius. Another useful article is Dr. A. E. Fossier's history of medical education in New Orleans from 1834.

[1] *Annals of Medical History*, New Series, vol. vi, No. 4, July, 1934. Edited by Francis R. Packard, M.D. New York: Paul B. Hoeber, Inc.; London: Baillière, Tindall and Cox. (Pp. 291–380; illustrated. Volume of six numbers, £2 15s.; single number, 12s. 6d.).

MALARIA IN TRINIDAD AND TOBAGO

In a recent public lecture at Port-of-Spain Dr. E. de Verteuil, acting deputy surgeon-general, described the malarial survey of Trinidad and Tobago which began in 1930, and which had revealed a high spleen and parasite rate in several areas. Atebrin had been found effective in destroying the parasites inside the human host. While pond breeding places had been brought under control, the problem of dealing with the rice fields remained for solution. In Indian settlements and native villages a high degree of immunity seemed to have developed, but until the mangrove swamps had been attacked such towns as Port-of-Spain were riddled with malaria. Some of these swamps still persisted, and called for eradication. A similar process of land reclamation and parasite control had been extended along the shores, rendering it possible for new villages to come into existence without increasing the liability to infection. For the last three years special attention had been directed to the rice fields. Drainage operations were now being conducted with a view to the abolition of breeding places, and considerable success had been achieved, especially in those detected near the larger centres of population. These had resulted also in the improvement of the general sanitation, the provision of recreation grounds, street widening and the opening up of crowded areas, and the relief of housing congestion in certain parts of Port-of-Spain. Tobago still needed energetic treatment, for the malarial strains there were particularly virulent. Only a few swamps would have to be dealt with to ensure the permanent extinction of the disease in a year or two.

THE SPLEEN AND CARBOHYDRATE METABOLISM

The modern conceptions as to the function of the spleen do not in general include that of an endocrine organ. The suggestion was recently put forward by certain Japanese workers that the spleen had an anti-parathyroid function, the removal of the organ in rabbits leading to a marked increase in serum calcium: injection of splenic extracts were reported as diminishing it. This work has not as yet been confirmed, and it is not easy to reconcile such findings with either the histological structure of the organ or the results of its ablation in man. The possibility of some connexion between the spleen and sugar metabolism was put forward as long ago as 1924 by Charles Richet and some of his pupils. Thus Rathery found that the extirpation of the spleen in dogs led to a more or less persistent rise in free and combined carbohydrate in the blood, suggesting that the spleen might contain or elaborate an insulin-like substance. That a certain amount of insulin may be extracted from tissues other than the pancreas is well known, but the results of Rathery were interpreted as indicating the presence of a substance other than insulin. More recently Fiessinger and his co-workers have reopened the question, and in a new series of experiments Rathery, Cosmulesco, and Grignon[1] re-examine the problem. These authors used an extract of spleen and followed the effects on the blood sugar of dogs after intravenous injection under

[1] *Presse Méd.*, June 13th, 1934.

various conditions. Details of the preparation of the extract are not given, but it appears to have been obtained by simple defatting and deproteinizing the splenic tissue. Having satisfied themselves that the blood sugar depressing effect was demonstrable in dogs, they proceeded to try it on diabetic human subjects, 2 c.cm. of the extract being injected intravenously. In eight out of ten cases the injection was followed by a more or less marked fall in blood sugar, the maximum fall being reached about one and a half hours after the injection, and the original level again in some two to three hours. In association with insulin the spleen extract seems to accentuate the insulin action. The suggestion is made that it might be useful to combine insulin injection with that of spleen extracts in certain cases of diabetes. The possible existence of a sort of activator of insulin in the body has been put forward recently by Himsworth, and it may be that the splenic extract here considered is of importance in this connexion. In none of the cases of diabetes treated with the spleen extract was there any question of hypoglycaemia, the fall in blood sugar rarely exceeding some 30 to 40 mg. per 100 c.cm. No suggestion is made (perhaps wisely) as to the mechanism of action of the spleen extract.

THE NATION'S FOOD SUPPLY

The Food Investigation Board, which has as its primary object the improvement of the food supply for the people of this country, has always followed the practice of according precedence first to home-grown, then to Empire, and finally to foreign produce. In its annual report, issued on August 20th by the Department of Scientific and Industrial Research, are reviewed the aims of the research work, now costing some £45,000 a year, which has been carried out on the transport and storage of foodstuffs. For example, the Torry research station finds that the period during which fish can be kept in first-rate condition on a trawler by the customary method of stowage in crushed ice can be extended from five to seven days to ten to twelve days. Work has also been done on the herring, with a view to improving the smoking of this fish and the production of a milder salt-cured herring. The latter has been obtained by a compromise between salting and cold storage. One interesting point emerges here—that kippers made from herrings which have been rapidly frozen in cold brine and then stored at low temperature for as long as four months are barely distinguishable from kippers made from the freshest fish. As regards meat storage, investigation has shown that beef can be maintained in perfect condition in the chilled state for sixty to seventy days in a 10 to 20 per cent. atmosphere of carbon dioxide, so that, providing gas-tightness can be secured in ships' refrigerated spaces, it would be possible to send Australian and New Zealand beef to this country in chill. Bacon cannot be stored successfully for any length of time by cold alone, and experiments have shown that this difficulty may be to some extent solved by the use of a complete atmosphere of carbon dioxide. Fruit storage is a somewhat complicated problem, and the best temperature for each variety can be found only by careful trials. There are now twelve gas stores for apples in this country, and several more are in course of construction. Most of them are intended for England's most important cooking apple, the Bramley seedling. It is interesting to note that the correct atmosphere for these apples can be obtained by allowing them to produce their own carbon dioxide and controlling its amount by regulating the ventilation. Empirical storage trials should yield much important information as to the possibilities for other apples, and considerable progress has been made during the last two years with Cox's orange pippin. The flavour is, however, apt to be elusive: in this apple full flavour is not developed after effective gas storage until the fruit has been subsequently kept in air at ordinary room temperature for several days. Further research is being undertaken on these points. Other activities of the Food Investigation Board include work in an experimental ship's hold at the Ditton laboratory. This is designed to improve conditions under which foodstuffs are carried on board ship.

CONTROL OF TRAFFIC IN NARCOTIC DRUGS

The annual statement prepared by the Home Office for the League of Nations on opium and other dangerous drugs[1] reports that during 1933 there were no considerable seizures nor indications of illicit traffic in Great Britain, and repeats the assurance that "drug addiction is not prevalent" in this country. The alkaloids codeine (methyl-morphine) and dionin (ethyl-morphine) have now been brought under control as regards manufacture and distribution, import and export. Last year 35,890 ounces of codeine were produced and 23,366 ounces exported direct by the manufacturers. Great Britain is innocent of production of raw opium, prepared opium, Indian hemp, and coca leaves. Cocaine is, however, permitted to be manufactured by one firm in London, and last year 16,023 ounces were so produced. Two firms, both in Edinburgh, are licensed to manufacture morphine, and 30,757 ounces of morphine alkaloid and 44,169 ounces of morphine salts were produced last year. It has, however, to be remembered that morphine is largely used for conversion into codeine, 26,089 ounces having been so utilized in 1933. The export of British-made morphine was less than in the previous year and greatly less than was the case only a few years ago; 16,156 ounces were exported in 1933. While the story of unmasking illicit traffickers in narcotics in this country is not as dramatic as that related by Russell Pasha in Egypt, two cases of interest are noted in the Home Office report. One arrest in September, 1933, made by the London police on information from Canada of a trafficker in opium when landing, disclosed that the illicit supplies were derived from one Karl Jorgenson, a Norwegian resident in Belgium, who has since been expelled from that country. In the other case Gandarillas, a Spanish subject, was found, on landing at Southampton from Havre on a transatlantic liner, to be in possession of 140 lb. of opium. Communications with the German police traced the source of this

[1] The Traffic in Opium and Other Dangerous Drugs. Report to the League of Nations by His Majesty's Government in the United Kingdom of Great Britain and Northern Ireland for 1933.

contraband to one Otto Janffmann of Hamburg, who was found to be identical with the well-known trafficker Edward Bender, who, when released on bail in America, had fled to Europe. According to the latest information Bender is awaiting trial in Hamburg for offences in connexion with narcotics among others. The new draft convention for the suppression of illicit traffic in dangerous drugs is now being submitted by the Council of the League of Nations to the various Governments in an amended form; twenty-three Governments have thus far indicated approval, while the United States and South Africa have intimated that they are not prepared to participate in the new Convention.

ENGLISH HOSPITAL DEVELOPMENTS

The Quarterly Bulletins of the Health Organization of the League of Nations can be relied upon to contain valuable and accurate summaries of national or international health activities in some part of the world which form material for the information and guidance of other responsible health authorities. Extract No. 8 of volume iii of these Bulletins, now published as a separate pamphlet under the title *Recent Tendencies in the Development of General Hospitals in England*,[1] is no exception to this rule. It is compiled by Dr. Melville D. Mackenzie, a member of the Health Section of the League of Nations secretariat, and is a model of accuracy, selection, and arrangement. It is in two parts, the earlier dealing with matters of hospital administration, the later with those of hospital construction. Neither part contains much that is not known to those who are actively associated with either of these aspects of hospital work, but nowhere else, within relatively small compass, can be found such a complete and reliable survey of these fields. The work of the British Medical Association in relation to hospital policy and administration is acknowledged and adequately set out in relation to medical staffs, pay-beds, provident schemes, contributory schemes, out-patient departments, and the collaboration between voluntary and council hospitals. The peculiar position of nursing homes in the English system is described, and the ways in which they are beginning to be brought under regulation by local authorities are noted. In this connexion the "home hospitals" mentioned in the Association's Scheme for a General Medical Service for the Nation are referred to, and some of the reasons which make such provision necessary are stated. The question of establishing or continuing special hospitals for chronic cases only is discussed, and the particular needs of maternity, of mental, and of infectious cases are not overlooked. There is in the pamphlet no advocacy of any particular policy: it is an impartial statement of prevalent ideas, views, and suggestions. As such, it forms a most valuable, and almost indispensable, basis for further discussion by committees or at conferences which, during the ensuing year, will be considering some or all of these aspects of hospital work with a view to early and practical application.

[1] *Recent Tendencies in the Development of General Hospitals in England.* By Dr. Melville D. Mackenzie. Quarterly Bulletin of the Health Organization of the League of Nations. Vol. iii. Extract No. 8.

PUBLIC HEALTH IN SOUTH AFRICA

Science, it is said, knows no frontiers, and so medicine, as a science, is one the world over. Nevertheless, according to latitude and the like, its occasions differ, and even without passing the frontiers of the British Empire we find the widest variety in the scope and method of its applications. Thus in the Union of South Africa it is, as here, recognized that every medical practitioner should be trained in preventive medicine, and yet the climate and conformation of the country, its racial make-up, and its endemic diseases all raise problems which differ notably from those encountered in England. A work on public health in the Union, issued by Dr. E. H. Cluver[1] at Johannesburg, brings out these points well, and presents a most informative picture of the duties and the opportunities alike of the practising doctor and the medical administrator in that sunny land. The essentials of meteorology, ventilation, lighting, water supply, and nutrition are stated with exemplary clearness. The view is expressed that in South Africa indoor fires are an unhygienic luxury, and the question of plumbo-solvency is treated more in the interests of the water-pipes than of the human subject. The importance of town planning is urged, pre-planning for the growing towns, re-planning for those which have grown awry. Special merit belongs to the section on the prevalent communicable diseases, including the control of typhoid fever, with its H and O agglutinations; of plague, now enzootic among veld rodents; of small-pox, which has not been epidemic since 1881; and of typhus, which is an endemic infection of the Transkei and Ciskei natives. Rabies is enzootic in the yellow mongoose. Of leprosy there are over 2,000 cases in institutions. Tuberculosis in the mines is ascribed not to silica but to sericite. Malaria prevails along the Natal coast and in the low veld of the Transvaal, and schistosomiasis is widely endemic in the lands drained by the eastward-flowing rivers. Dr. Cluver's book reveals the wide range and interest of medical practice in South Africa. It is intended primarily to meet the requirements of medical and D.P.H. students in the University of Witwatersrand. They could not, we think, be better served. It should make also, as suggested in a foreword by the Chief Health Officer of the Union, a wider appeal to doctors and medical and lay public health workers, who will derive from it sound doctrine and valuable guidance to aid in deciding what course to follow in an hour of stress.

Sir George Seaton Buchanan has been appointed Master of the Society of Apothecaries of London for 1934–5, and Sir William H. Willcox and Dr. J. S. Fairbairn, Senior and Junior Wardens, respectively, for the same year.

We regret to announce the death in Copenhagen, on September 1st, of Professor Carl Olaf Jensen, director of the Danish Agricultural and Veterinary School, whose name is known throughout the world for his researches on cancer.

[1] *Public Health in South Africa.* By E. H. Cluver, M.A., M.D., D.P.H. Johannesburg: Central News Agency. (12s. 6d.)

Nova et Vetera

THE MEDICAL AND MENTAL HISTORY OF DR. SAMUEL JOHNSON

Dr. W. Russell Brain, writing as a physician and neurologist, has contributed to the May number of the *London Hospital Gazette* a valuable paper on the medical history of Samuel Johnson. He calls his essay "A 'Post-Mortem' on Dr. Johnson" and read it to the Osler Club. It is much more than an anamnesis of an autopsy, for Dr. Brain considers some aspects of his subject which could not possibly be discovered after death—aspects which throw a new light on the mentality of one who dominated the literary circles of his generation and yet himself suffered from an inferiority complex.

The main outlines of Dr. Johnson's bodily health are well known. He had tuberculous glands as a child, and Queen Anne "touched" him for their cure. He suffered from such a high degree of myopia as to be practically blind in one eye. He was so hard of hearing that in later life he sat in the gallery at St. Clement Danes as close as possible to the pulpit. He suffered so severely from indigestion that he once wrote to Mr. Hector, whose sister was his first love, "My health from my twentieth year has been such as seldom afforded me a single day of ease." He had more than one cerebral thrombosis, and late in life he had asthma. A post-mortem examination was made in the presence of Drs. Heberden and Brocklesby and Mr. Cruikshank. The record exists, and from it, in the light of modern knowledge, Dr. Brain says:

"The pathological findings would appear to be due to hyperpiesia and chronic heart failure, ischaemic kidneys, chronic emphysema, and cholecystitis. Some writers have assumed that Johnson's asthma was bronchial asthma. This is unlikely, in view of its late onset; and his dyspnoea seems to have been due at first to emphysema and later to 'cardiac asthma.'"

The most interesting and wholly new part of the essay is that dealing with a psycho-analysis of Dr. Johnson, and it gives much food for thought. Dr. Russell Brain, speaking as a neurologist, says:

"Johnson's physical infirmities were probably less distressing to him than his disorder of mind, of which the most obvious manifestations were his remarkable involuntary movements. . . . His gesticulations, like most of his other characteristics, were on a large scale. At times he would hold his hands at his breast in motion like those of a jockey at full speed. He would stretch out his arm with a full cup of tea in his hand in every direction, to the alarm of his immediate neighbours. 'Sometimes,' says Miss Reynolds, 'he would twist himself round with his face close to the back of his chair and finish his cup of tea, breathing very hard, as if making a laborious effort to accomplish it.' He went through complicated manœuvres with his feet, and had to carry out an elaborate ritual of movements before he would pass through any door. Sometimes he would stop in the street to gesticulate. . . . One Sunday morning in Twickenham Meadows his antics caused a crowd to collect. When he sat down by the river they nearly dispersed, but he pulled out of his pocket Grotius' *De Veritate Religionis*, over which he seesawed at such a violent rate as to excite the curiosity of some people at a distance to come and see what was the matter with him.

"Another symptom of his mental abnormality was his melancholy, which, in his own opinion, he inherited from his father. He seems to have first suffered from this when at Oxford at the age of 20. . . . He had a particularly severe attack when he was 56. . . . His fear of death was a constant obsession, and was probably the cause of that hysterical outburst of laughter which was aroused by Langton's making his will. He sat up late at night to avoid being left to himself. 'I lie down (said he) that my acquaintance may sleep; but I lie down to endure oppressive misery; and soon rise again to pass the night in anxiety and pain.' Yet Fanny Burney could say of him, 'Dr. Johnson has more fun and comical humour about him than almost anybody I ever saw.'

"What was the nature of his disorder of mind? Was he, as he himself, to Boswell's distress, said, 'mad all his life, at least not sober'? Periodical melancholy, or at least depression, naturally suggests manic-depressive psychosis. Yet there are several reasons for believing that Johnson's depression was not due to a psychosis. The most important is that to a large extent his lowness of spirits could be dispersed by distraction of mind, which leaves psychotic depression untouched. He himself practised distraction of mind as a cure for melancholy, and often recommended it to others. An amusing example of his method is given by Mrs. Piozzi. 'When Dr. Johnson felt his fancy, or fancied he felt it, disordered, his constant recurrence was to the study of arithmetic; and one day that he was totally confined to his chamber, and I inquired what he had been doing to divert himself; he showed me a calculation which I could scarce be made to understand, so vast was the plan of it and so very intricate were the figures: no other indeed than that the National Debt, computing it at one hundred and eighty millions sterling, would, if converted into silver, serve to make a meridian of that metal, I forget how broad, for the globe of the whole earth, the real globe.'"

Johnson's melancholy, like his gesticulation, was a symptom of his severe obsessive-compulsive neurosis, says Dr. Russell Brain, and he concludes a very valuable essay by considering what Freud, Adler, and Jung would have made of Johnson. Freud, he thinks, would fit him in the somewhat Procrustean bed of Jocasta. Johnson's wife, old enough to be his mother, must surely have been a mother-substitute, and Mrs. Williams, Mrs. Desmoulins, and the other queer old ladies with whom he lived in a kind of platonic polygamy would have held a similar position. Adler would regard Johnson as a man of exceptional ability suffering from the fatal psychological handicap of several forms of inferiority; his physical defects of poor vision and facial disfigurement, his lack of comeliness relative to his younger brother, and his hampering poverty must all have been thorns in his flesh when he considered his intellectual capacity and what he might have been had it not been for these handicaps. Jung would classify him in the group of "thinking extroverts."

"In his religion intellectual dogmatism seems to have taken the place of mystical experience, and he was racked by a sense of guilt which made the thought of death an intolerable obsession. . . . Though in no sense a Pharisee, yet psychologically he was a whited sepulchre, without—the Thirty-nine Articles, within—the dead men's bones of pessimism, terror and despair."

Dr. Brain's final picture of Johnson is that of a man of genius, harassed by physical infirmity and mental ill-health, failing to find adequate employment for his talents and satisfaction for his ambitions, yet triumphing over all handicaps and achieving an immortality in human affection that would have been denied to the successful politician or lawyer he might have been.

THE PORT OF LONDON IN 1933

General interest attaches to many parts of the annual report for 1933 of the medical officer of health for the Port of London, the extent of which is from Teddington Lock to the entrance of Havengore Creek in Essex and the Warden Point in Sheppey. The tonnage of entering vessels exceeded that of 1932 by more than 1,239,000 tons. Of the 13,575 vessels arriving from foreign ports 1,600 were inspected by medical officers. No case of plague arrived, and no plague-infected rats were found in any ships or on shore in the Port. Under the new sanitary regulations of 1933 a total of 1,027 certificates were issued in respect of deratization; the paper read last year before a meeting of the Association of Port Authorities by the medical officer of health on the rat-proofing of ships is reproduced. In it Dr. C. F. White indicates the main lines of this work, such as the opening up of pipe casings and the stopping of rat runs. He urges that the correction of rat harbourage should be indicated on certificates by the words "eliminated" or "protected," as the case may be. When harbourage has been really eliminated, the word "none" should appear in the rat-harbourage column of subsequent certificates. The Port of London Authority has issued instructions that all new work is to be structurally rat-proof. Dr. White concludes this section of his report by remarking that, although to some small extent *X. cheopis* fleas are found on ship rats in the Port, it is very rarely that they persist ashore. They certainly

do not multiply on the shore rat population, and if the spread of rodent plague ashore depends on the *X. cheopis* the Port of London should be practically immune from any danger of a rat epizootic.

SHIPS' WATER SUPPLY

Ships usually obtain water from the shore supplies afforded to the docks by the Metropolitan Water Board and the South Essex Water Company, but when no water is available at the berth, or the ship is lying at moorings in the river, the supply is drawn from water boats, of which there are twelve working in the Port. Every care is taken to avoid pollution of all the sources, but in August, 1933, an outbreak of enteritis on a ship in the Mediterranean was traced to the end of a canvas hose attached to a tap on a quay. It was found that samples from the end of this hose, but from nowhere else, contained coliform bacilli, although no true *B. coli* were recovered. It is concluded, therefore, that coliform organisms may gain access to pure water during its passage along a length of hose to a ship, and will, under favourable conditions, multiply during storage in the ship's tanks. These bacilli are not pathogenic, but they indicate the possibility of dangerous contamination. Dr. White adds the caution that in such cases it is important to discriminate between the true *B. coli* and coliform bacilli—a distinction which is not always made. He does not think that bacteriologists should unhesitatingly condemn a sample of water from a ship merely because coliform bacilli are present. Doubt should be expressed about the sample without a final condemnation. Coliform bacilli are probably present in the majority of samples of water from ships, but outbreaks of water-borne disease on shipboard are very rare: he remarks that it is very doubtful whether the outbreak of enteritis in this ship was actually due to the water supply, and that it is certain that the water supplied in the Port of London is above suspicion.

BOARDING OF VESSELS ON ARRIVAL

Dr. White hopes that some day the routine boarding of ships from infected ports will be discontinued, and in its stead there will be boarding of ships carrying cases of infectious disease and also any case of sickness which might conceivably be of an infectious nature, though not actually diagnosable as such. The port medical officer should be the person to carry the responsibility of deciding whether a case might possibly prove to be infectious. Many cases of typhoid fever, some of small-pox, and a few of plague have been landed in this country as "influenza"—a diagnosis which should always be regarded with suspicion by every medical officer. When a ship arrives which has on board a case of one of the major infectious diseases, or on which such a patient has died or has been landed abroad within the incubation period of that disease, it is the practice to regard every person on board as a contact and to arrange for his supervision. Those intending to leave the ship are required to give their names and future addresses before leaving; for it has been found useless to extract this information from the passenger manifest and the crew's articles. The introduction of a double postcard, one half for the notification of the immediate address and the other for notification of any change of address, has proved very successful in expediting the clearing of ships and the transmission of the necessary information to the medical officers of health of the districts of destination, and in making passengers realize their obligations under the regulations. The section for notifying change of address is on the "business reply card system," so that the passenger need not stamp it. The efficiency of the system was indicated by an instance when 289 such cards were issued and only one address could not be traced.

The Treasury has recently made, on the recommendation of the Advisory Committee, the Additional Import Duties (No. 28) Order, 1934 (S.R. and O., 1934, No. 921), under which the Customs duties on medical, surgical, dental, veterinary, and dissecting instruments and parts thereof will, as from August 25th, be at the rate of 20 per cent. ad valorem.

THE TWELFTH INTERNATIONAL VETERINARY CONGRESS

This was held in New York during the week beginning August 13th, under the presidency of Dr. JOHN R. MOHLER, chief of the United States Bureau of Animal Industry. It was attended by approximately 3,000 delegates from about sixty different countries—nearly twice as many as had attended any previous congress. This is the first occasion it has taken place in America, the last congress, as readers may recall, being held in London in 1930 (see *Journal*, August 16th, 1930, p. 259). During the course of the congress many topics relating to medicine and comparative medicine were discussed, and we give below a selection of those of more immediate medical interest.

ANTHRAX

On Monday afternoon (August 13th) Dr. MARIO MAZZUCCHI (Italy) described his new method of vaccinating animals against anthrax. This method aims at localizing bacilli with a certain degree of virulence at the site of inoculation and attaining the slow absorption of an antigen with a high immunizing power. To do this he injects the organisms simultaneously with saponin ("carbozoo" vaccine) in order to bring about a gelatinous oedema around the injected bacilli. In sheep an immunity is still noticeable five months after vaccination, although this immunity is not observable before the ninth or tenth day. He claimed that this method of vaccination was a harmless and effective means of clearing up enzootic hotbeds of the disease, over two million animals having been treated in Italy alone in this way. Dr. VIDAL MUNNE (Spain) believed that immunity in this disease was possible only when the bacteria reproduce at the site of inoculation and there form capsules, and he concluded that intradermal inoculation is most efficient.

INFECTIOUS MASTITIS

Professor STECK (Switzerland), on the same afternoon, introduced a discussion on infectious mastitis. He held that the disease in cattle could be effectively controlled only by eliminating infected animals (by fattening and slaughter), by separation of all less seriously infected animals, and by chemotherapy to minimize the spread of the infection and shorten segregation. He believed that the repeated use of antiseptics such as the acridine derivatives gave an efficacy of over 90 per cent. Dr. MINETT (Royal Veterinary College) discussed streptococcal mastitis from its bacteriological and preventive medicine viewpoint. The disease was mainly caused by *Streptococcus agalactiae*, although two strains of haemolytic streptococcus were sometimes also involved. The latter were very similar to the human *Streptococcus pyogenes*. As a rule they did not cause disease in man, although human strains were occasionally seen in mastitis and were especially dangerous. The disease could be effectively controlled by milking infected cows last. Dr. SVEN WALL (Sweden) discussed mastitis due to *Diplococcus schütz*; and Professors CHRISTIANSEN and NIELSEN (Denmark) considered the methods by which cattle became infected. They concluded that under natural conditions this was always by the teat canal, although they admitted that some undiscovered factors existed which governed the entrance of the bacteria. Drs. JONES and LITTLE (U.S.A.) agreed. Their experiments indicated that the udder became sensitized by one or more preliminary infections which did not result in disease.

VETERINARY SANITATION

On Tuesday morning (August 14th), at a general session of the congress, a paper by Professor LECLAINCHE (France) was read on State veterinary sanitation. The old methods which had already conquered—at least partially—many important diseases, such as glanders, rabies, anthrax, and various others, were insufficient against such widespread infections as tuberculosis, Bang's disease, and so on. Eradication of these was at present impracticable, and it was sought instead to limit the losses to a supportable

economic total. He expressed himself in favour of using only healthy stock to build up herds and to replace unprofitable animals, and advocated the issuing of State certificates of health, which would guarantee not only that the animals were free from disease themselves, but that they came from healthy herds. He opposed hasty methods of eradication as likely to lose the confidence of the stock owner. At the same session Dr. MOHLER, chief of the Bureau of Animal Industry (U.S.A.), discussed the relation of veterinary science to animal breeding and public health. In connexion with the latter he stressed the importance of meat inspection and of veterinary supervision of animals at the time of slaughter; of improvement in milk supplies, and of the value of research on animal diseases in providing information of value for the betterment of mankind.

PSITTACOSIS AND WEIL'S DISEASE

On Tuesday afternoon Professor MEYER (U.S.A.) discussed the 1931 outbreak of psittacosis, which took place in parakeets in California. The casual agent was a filterable virus, transmissible to a number of other species of birds and to man. Since 1929, 143 human cases had been definitely diagnosed in North America. United States health regulations now required certificates of health and other precautions to be taken before parakeets were transported anywhere. At the same session Dr. KLARENBEEK (Holland) drew attention to the frequency of Weil's disease in dogs in Holland, and its importance in these animals, because of their intimate association with man. It was the more important on account of the difficulty of diagnosis in the dog and the variability of the symptoms which it caused.

TUBERCULOSIS

On Wednesday morning (August 15th) Dr. E. A. WATSON (Canada) introduced a discussion on tuberculosis. He had studied the B.C.G. method of vaccination over a period of ten years in a dairy herd of ninety cattle, fifty-four of which had been vaccinated, thirty-six acting as unvaccinated controls. All were equally exposed to natural infection, and on necropsy the incidence of tuberculosis was exactly the same—83.4 per cent.—in both groups. The anatomical distribution of the disease was similar in both groups, but in the vaccinated animals the lesions tended towards caseous, caseo-purulent, and exudative processes, with appreciably less fibrosis than in the unvaccinated group, in which caseo-calcareous lesions predominated. The critical age was between puberty and maturity—that is, 2 to 4 years in cattle—when the increased relative resistance attributable to B.C.G. vaccine was seen to fail rapidly and to disappear. Dr. GUÉRIN (of the Pasteur Institute, France) said that since the last congress in 1930 no fresh observations had been made which would give rise to the hope that a new approach to the problem of tuberculosis prevention in cattle might finally be found, and our two conceptions of prophylaxis were still based on (1) the use of tuberculin and (2) the production of a state of allergy. He believed that the production of an allergic state by the use of B.C.G. furnished a resistance to subsequent infection with virulent tuberculosis, and that it was of great value in controlling the disease. He considered that it was useless to try to eradicate the bacillus, and that we must aim at preventing its effects; further, that we must give up the idea of slaughtering all animals reacting to the tuberculin test, and concentrate on producing resistance to the disease. Dr. WIGHT (U.S.A.) described the campaign to eradicate tuberculosis in the United States, and stated that about 65 per cent. of the cattle in that country were now under supervision. Already 130 million tests had been made, and three million reactors had been destroyed. Dr. ZWICK (Germany), while expressing admiration of the American work, did not believe that it was practicable in Europe. In Germany they used the Ostertag plan, which aimed at the elimination of contagious cases. That this system was valuable was beyond doubt. He considered that the B.C.G. vaccine was still in its experimental stage, and stated that the tendency in Germany was to be cautious. Professor BASIL BUXTON (Cambridge) described the Cambridge experiments on B.C.G., which were commenced in 1927 and were still continuing. These results indicated that the vaccine could raise the resistance of a calf to a virulent experimental infection. The degree of resistance varied considerably, and appeared as a rule to be directly proportionate to the dose of vaccine. Experiments were now in progress to ascertain whether repeated vaccination at proportionate intervals over a period of years would maintain the resistance of cattle to reinfection with virulent bacilli.

IMMUNITY TO PARASITES

On Wednesday afternoon Professor T. W. M. CAMERON (McGill, Canada) discussed the question of immunity against animal parasites. He believed that the resistance mechanisms of the body against animal parasites did not differ in principle from those evoked against bacteria and viruses, but their method of attack was so different that their manifestations were often altered considerably. Our present knowledge of the subject was still fragmentary and confusing. It seemed possible, however, to summarize our existing knowledge in the following terms. Animals were *naturally immune* to parasites of physiologically unrelated animals, although a few worms appeared to have very wide physiological requirements—for example, fasciola, trichinella, and the larval stages of echinococcus. In certain circumstances natural immunity may be broken down. Animals were naturally *tolerant* to the effects of their own parasites, but this tolerance could easily be broken down by adverse factors. They were much less tolerant to abnormal parasites. Animals often become *premune* to their own parasites; this premunition might be broken down by unnatural factors such as lack of food, overcrowding, other parasites, and so on. This was a common method of resistance to protozoa; we were less sure of its operation against metazoa. Animals were sometimes susceptible to parasites proper to physiologically related animals; an age resistance was often shown to these as it was to other abnormal or recently introduced species. The evidence for breed immunity was still very scanty. There was little evidence yet of a true *acquired immunity* against adult helminth parasites, and, although theileria produced a sterile immunity and the coccidia might do so, premunition was, in general, the usual means of resistance among the protozoa. In practice an artificial premunition can be produced only against babesia. It seemed probable that hypersensitiveness was a normal defence reaction of the body. The phenomenon had been successfully used in diagnosis. Some of the serological changes observed appeared to have no necessary connexion with defence reactions, but some had. There was no evidence (with the doubtful exception of sarcocystis) that any of the animal parasites produced a true toxin, and the "foreign proteins" introduced by them into the body were probably normal secretions and excretions. If antibodies produced in response to normal secretions inhibited their actions, they might well prevent parasites from securing and digesting food, and consequently act as a mechanism of resistance. Other antibodies, especially in the protozoa, acted by interfering with reproduction, possibly in a somewhat similar way. The eosinophils, evoked in response to the presence of foreign proteins, seemed to play an active, but as yet improperly understood, part in the defence against metazoan parasites and their effects.

MILK MARKETING

On Thursday morning (August 16th) Dr. VON OSTERTAG (Germany) introduced a general discussion on the marketing of milk. As wholesome milk, he declared, could only be derived from healthy cows veterinary milk control was essential. Milk must not be marketed from cows with udder or "open" tuberculosis, but the question of the transmissibility of Brucella through milk required further investigation. Milk should not be considered dangerous in cases of European mastitis caused by *Streptococcus agalactiae*, in contrast with American mastitis caused by *Streptococcus pyogenes*; it was sufficient to exclude milk which had undergone changes. Milk from animals infected with one of the paratyphoid enteritis organisms must receive particular attention, owing to the dangers of human infection.

VIRUSES

At the same session Dr. MANNINGER (Hungary) introduced a discussion on filterable viruses, which he considered should be called "ultra-viruses," because of a filterable phase in the life cycles of some bacteria. They could be grown *in vitro* only in the presence of living cells—especially active cells. For the most part they caused exceedingly contagious diseases, although a few did not, and many gave rise to cell inclusions. Dr. DERLACH (Austria) commented on their striking resemblance to true enzymes and the unique position they held with regard to their antigenic behaviour. Viricidal power might be demonstrated almost regularly in their antibodies, and it was possible that these were closely related to the antitoxins and antiferments. After recovery from disease the supervening immunity might be of long duration and high titre.

CONTAGIOUS ABORTION

In a discussion on Brucella disease which followed Professor BANG (Denmark) declared that in northern Europe only *Brucella abortus bovis* had been demonstrated in human undulant fever, and that as the bacilli do not multiply in the milk after it is drawn from the udder, mixed milk will usually contain only a small number of the organisms. Dr. COTTON (U.S.A.) described a nation-wide plan in America to reduce the condition by testing and slaughtering reacting animals. Dr. FINZI (Italy) discussed the desirability of standardizing the biological tests for the organism. He believed that there was a future for chemotherapy in the fight against Brucella infections, and that while live vaccines were dangerous dead vaccines were almost useless.

ANIMAL PARATYPHOID AND PUBLIC HEALTH

In the afternoon Dr. CLARENBURG (Netherlands) opened a discussion on the paratyphoid diseases of animals in relation to public health. Complete absence of danger to man could not be claimed for any of the animal salmonelloses, and any meat from any animal harbouring the organisms was potentially dangerous, as well as infected milk and eggs. He advocated compulsory notification of salmonelloses of animals, and minute differentiation of Salmonella occurring in man and animals. Dr. MURRAY (U.S.A.) and Dr. STANDFUSS (Germany) discussed the classification of the group in some detail, based on their reactions in various carbohydrate media.

France

[FROM OUR CORRESPONDENT IN PARIS]

The late Professor Léon Bernard

An international as well as a national leader of medicine has been lost in Léon Bernard, professor of tuberculosis in the University of Paris. His conception of a holiday was change of work, preferably in moving about from place to place, inspecting in France the many tuberculosis activities with which he was connected. A serious motor car accident a few years ago arrested his zeal only momentarily, and he was in the full exercise of all his faculties when, in the latter half of August, at the age of 62, he was admitted to a nursing home in Clermont-Ferrand on account of a dental abscess whose evolution proved fatal in a day or two. Médecin des Hôpitaux de Paris, Léon Bernard succeeded Chantemesse in 1919 in the chair of social hygiene in the Faculty of Medicine. Subsequently, he became clinical professor of tuberculous diseases. He was president of the Conseil Supérieur de l'Hygiène Publique, and the permanent delegate of France on the Health Committee of the League of Nations. His publications covered a wide range, and some of the most important were those concerned with public health. Holding a commanding position at the Laennec Hospital in Paris, he extended his tuberculosis activities throughout France, and was the chief promoter of the Cité de Fairvivre—the French equivalent of Papworth. He was also the originator, as well as the chief administrator, of the Colonies de Placement Familiale des Tout-Petits—a system for the removal of the newborn child from its tuberculous mother to healthy surroundings. Léon Bernard was a member of the Permanent Committee of the Office International d'Hygiène Publique, secretary of the International Union Against Tuberculosis, and adviser to the League of Red Cross Societies, to whose successful work he contributed not a little at the Cannes meeting in 1919. Though he was best known as a clinician and administrator, his qualities as a laboratory and research worker were rated so highly by the authorities that, at the time of Roux's death, there was serious talk of Léon Bernard being asked to succeed him as head of the Pasteur Institute.

New Street Accident Hospital in Paris

In the past a goodly proportion of the street and other local casualties found their way to the old Beaujon Hospital, in which President Doumer died after being shot on May 7th, 1932. The Beaujon is now to have a successor in a less central part of Paris, and its emergency activities will be taken over by a small new public hospital to be devoted exclusively to street accidents. There are to be only forty-seven beds for such cases, and the hospital will be given the name of Fondation Paul-Marmottan in commemoration of its principal benefactor. The building will be one of four stories, the first three being for the accommodation of the patients themselves and for a radiological service. On the fourth floor there will be accommodation for operating theatres and for services ancillary thereto.

England and Wales

The British Post-Graduate Hospital and Medical School

The new buildings at Hammersmith are rapidly approaching completion. A priced schedule of equipment for all purposes was prepared some time ago, the estimated expenditure therefor amounting to £52,800, exclusive of sterilizers and certain constructions which had to be obtained, at an estimated cost of £1,450, as the building works proceeded. The total estimated cost for works and equipment is £198,000. It is thought that it would be a very complicated and difficult matter to determine, in accordance with the terms of the agreement entered into last year between the London County Council and the Corporation of the School, what equipment is required for the use of the hospital separately, and for the use of the school separately, particularly as a certain amount of equipment will be used by the hospital and school jointly. The equipment for the purposes of the hospital, having regard to the post-graduate teaching which is to be given therein, is necessarily on a more extensive scale than would ordinarily be required at a Council hospital; on the other hand, the superior equipment of the school will be to the hospital's advantage. It is therefore proposed

that the cost of the whole of the initial equipment shall be divided equally between the two parties, as has been done in the case of the buildings. Various developments are taking place at Hammersmith Hospital in anticipation of the establishment of the school. When the block containing the new labour rooms is opened additional maternity beds will be required, and these are to be obtained by the adaptation of a ward in another block to provide for seventeen maternity cases. Accommodation will also be provided for twelve cots, with a bathing bay and sun balcony. Additional isolation accommodation will be necessary, to be obtained by the adaptation of a single-story block hitherto used for maternity purposes, with accommodation for a nursing staff of five. It is also proposed to fix glazed sliding sashes to the six sun balconies so as to provide adequate fresh air and protection from the weather. The hospital formerly had only one entrance, but a new entrance, with a roadway for all goods traffic, is being constructed at its western boundary. As already announced, it is intended to make provision for a radiological department at Hammersmith which shall be a consultative centre for the whole hospital service of the L.C.C. To this department cases will be sent from other hospitals for expert opinion on diagnosis and treatment. The officer in charge, whose salary will be £1,500 a year, will be designated "Director of the Radiological Department of Hammersmith Hospital and Consulting Radiologist to the Council's Hospitals."

Medical Society of London

The first half of the session 1934–5 of the Medical Society of London will open on Monday, October 8th, with the annual general meeting at 8 p.m., followed by Lord Horder's presidential address on "Medicine and Morals," at 8.30 p.m. On Monday, October 22nd, at 8.30 p.m., a discussion on the anaemias and their treatment will be introduced by Dr. Leslie Witts. A clinical evening will be held on Monday, November 12th, at 8 p.m. A discussion on the value of accessory methods in the diagnosis of intracranial tumours and allied conditions will be opened by Mr. Hugh Cairns on November 26th, at 8.30 p.m. On Monday, December 10th, at 8.30 p.m., Dr. H. Graham Hodgson will introduce a discussion on the future of diagnostic radiology. The Lettsomian Lectures will be delivered by Mr. J. E. H. Roberts on February 18th and 27th and March 4th, 1935, at 9 p.m. Sir William Willcox will deliver the annual oration on Monday, May 13th, 1935.

Residential Treatment of Tuberculosis

For many years the London County Council has published after-histories of patients who have received residential treatment for tuberculosis under its scheme. The latest particulars relate to the number of survivors of those who received treatment and were discharged in 1928. The number of adult patients discharged from institutional treatment during that year was 4,867, in 290 of whom the diagnosis of tuberculosis was not confirmed, and of the remaining cases the subsequent history of 437 cannot now be traced. Of 766 early cases 71.8 per cent. have been found to be alive after the five-year interval, of 2,149 moderately advanced cases 34.6 per cent. have been found to be alive, and of 960 advanced cases 4.7 per cent., while of 261 surgical cases 75.8 per cent. were surviving. During the same year (1928) the number of children discharged from residential institutions after having received at least one period of residential treatment was 938. In 171 cases the diagnosis of tuberculosis was not confirmed, and in eighty-six others reports were not available. Of 148 early pulmonary cases 12.2 per cent. were dead after five years, of thirty moderately advanced cases 63.3 per cent. were dead, and of twenty-eight advanced cases all were dead. The proportion of deaths, after five years, in 475 surgical cases was 5.9 per cent. The London County Council is proposing no longer to require contributions towards the cost of the residential treatment of tuberculosis from patients or persons legally responsible for them. In the opinion of the Hospitals and Medical Services Committee the requirement is neither sound in principle nor desirable in practice. In fact, less than 30 per cent. of the cases treated have been so assessed, and the sums collected annually in recent years have been about £11,000, while the cost of collection has been £1,800. It is pointed out that it has been a principle in connexion with the assessments for tuberculosis in the past that regard should be paid to the importance, on medical grounds, of maintaining the standard of living of the family. Tuberculosis is a disease in dealing with which it is vitally essential that nothing should be done which might give cause for financial worry or anxiety to the patient or patient's family during treatment, or be likely to lower the resistance of the family to disease. It is, moreover, a disease specially liable to recur, and the heaviest mortality among tuberculosis patients occurs during the first four or five years after discharge from institutional treatment. It is very necessary that employment undertaken by ex-tuberculosis patients should be suitable, and that they should not be forced by financial circumstances to take unsuitable employment. It is added that there is no desire that the discontinuance of assessments should in any way affect the carrying out by Care Committees of their primary and important functions with regard to the tuberculous. The new Council appreciates greatly, as its predecessors did, the services rendered by voluntary workers on the Care Committees and by the officers of the borough councils associated with the work.

Coroners' Inquests in London

During 1933 the number of deaths reported to London coroners was 8,533, an increase of 173 on the figure for 1932. Of these 3,025 took place in mental hospitals and other institutions. The coroners held inquests in 3,543 cases and directed post-mortem examinations in 2,896 of these cases, as well as in 2,962 of the other cases in which no public inquiry was necessary. A verdict of murder was returned in seven cases and of manslaughter in two. The total number of suicides was 760, an increase of forty-one on the year. Three inquests were held in connexion with executions. Deaths from want of attention at birth decreased from forty to twenty-eight. The number of people who met their death by accident was 1,965, as compared with 1,892 in 1932. Injuries accounted for thirty-two deaths, and there were fifty-four deaths by drowning. A verdict of "Death from natural causes" was returned in 504 cases, and there were seven verdicts of "Cause of death unknown." Inquests on newly born children decreased from sixty-seven to forty-four, and verdicts of murder of the newly born were returned in only two cases. Excessive drinking accounted for fifty three deaths, as compared with fifty-four a year ago.

Fire and Explosion Risks in Operating Theatres

The London County Council has asked the Minister of Health to consider the desirability of an investigation being made into fire and explosion risks in operating theatres due to the use of modern anaesthetics and electrical appliances, with a view to the formulation of effective safety precautions. Until such time as an authoritative decision on the matter is available, the practice of requiring that switchgear provided in registered nursing homes shall be of the highest standard commercially obtainable will be continued.

Salaries of District Medical Officers

Last year the London County Council fixed provisional ılaries to be attached to certain positions of district ıedical officer, but statistics now available as to the work ı the new medical relief districts show that in certain ıses the provisional salaries are not commensurate with ıe amount of work the officers have to undertake. From ctober 1st next, and until the whole question of the istrict medical service is reviewed, the salary will be ıcreased, in three districts by £35, in six by £50, in ne by £75, and in one by £110.

Hull Royal Infirmary

During the past five years the work of the pathological epartment of the Hull Royal Infirmary has more than oubled, and in the annual report of this institution for 933 it is announced that certain alterations and exten- ons have consequently had to be effected at a cost of ver £850. The permanent appointment of an assistant athologist is also recorded. The efficiency of the *x*-ray epartment has been increased by structural alterations ıd the provision of a new dark room. Other new staff ppointments rendered necessary by the increase in the ork of the Infirmary include that of a third honorary hysician to relieve the strain imposed by the opening f the Sutton Branch, and of a resident surgical officer) co-ordinate this side of the work. There was an in- rease in the number of in-patients treated during the year nder review, establishing a new high record for the ıfirmary. As regards the associated activities, it is ported that a preliminary training school has been ened in order that probationer nurses may receive some reliminary instruction before taking up ward duties. his innovation has proved to be valuable to the institu- on as well as to the students. In order to help out- atients who would normally have to attend daily at ıe Infirmary for dressings, and for whom the journey ould have been a hardship owing to distance or home nditions, the executive committee of the Hull Jubilee istrict Nursing Association made arrangements during 933 for their nurses to attend such patients in their omes. In this connexion it may be noted that there was marked decrease in the number of out-patients treated t the Infirmary in 1933 as compared with 1932, though the umber of casualties treated increased. An arrangement as been made with the Hull Incorporated Law Society hereby patients admitted as the result of accidents, and ho express a desire for legal advice, are put into touch ith local solicitors on the society's rota. The service is ot necessarily free, but where it is found, on investiga- on, that a patient is not able to pay for the legal aid quired, the case is passed on to the Poor Man's Lawyer ommittee of the Hull Community Council. The main bject of the scheme is to prevent patients from getting ıto the hands of touts, and it is also hoped that where ıe Infirmary is legally entitled to payment for mainte- ance (as in certain cases under the Road and Rail Traffic ct) the new arrangement will be of value in securing a eedy and satisfactory settlement in this respect. Another rangement with the Hull Community Council provides ıat the council's social service secretary shall act as part- me almoner in the case of patients needing after-care eatment and advice. A Samaritan fund has been brought to being for helping indigent patients who require such cessories as special appliances. In the year under review ıere was an excess of ordinary expenditure over ordinary ıcome of nearly £7,000; not since 1928 has there been year when ordinary income equalled expenditure, and ıe accumulated deficit since that time now amounts to ıore than £23,000. Several large special donations were ceived, however, during the year, and various voluntary ommittees have rendered generous help.

Scotland

Housing Amenity in Scotland

The Secretary of State for Scotland has set up an advisory committee to the Department of Health to consider how architectural quality and amenity may best be incorporated in the layout, planning, and external treatment of houses for the working classes in both town and country, and to consider whether higher tenements than have hitherto been accepted should be permitted. The chairman of the committee is Mr. J. R. Richmond, C.B.E., director of an engineering firm in Glasgow, and the members include a number of prominent Scottish architects and surveyors. It is hoped that the work will lead to improvement in the general amenity and quality of buildings to be erected, especially in places where clearances are to be made, and where it is desirable to rehouse as many of the dispossessed dwellers as possible in sites near their work. It is proposed that new tenements shall follow the present Continental models, with balconies, gardens, and possibly roof-gardens. The new scheme is part of the Government's housing plan, under which it is estimated that some 200,000 houses are still required in Scotland.

New Scottish Hospitals

The Aberdeen Town Council has approved the erection of a special block in the new Aberdeen Royal Infirmary buildings, Foresterhill, for the treatment of diseases of the ear, nose, and throat at an estimated cost of £60,000, as part of the Joint Hospital Scheme, for which a sum of £400,000 was subscribed. The Public Health Committee of Dunfermline Town Council has recommended a site at St. Leonard's, on the south side of Dunfermline, for the erection of a new maternity home and hospital. The accommodation in the present hospital, which has been successfully managed by the Corporation for some years, has recently been found insufficient for the number of patients applying for admission. It was intimated at a meeting of Peterhead Town Council that a gift of £5,000 had been received from Mr. William Shewan to provide a hospital for the town. A condition of the gift was that within five years a suitable hospital should be established and equipped.

Pithead Baths in Fife

Pithead baths, which have been erected at a cost of £13,000, provided by the Miners' Welfare Committee, were opened at the Aitken Colliery, Kelty, on August 23rd, by Dr. T. G. Nasmyth, Edinburgh, senior director of the Fife Coal Company, to which the Aitken Colliery belongs. The baths are the second largest in Scotland, accommodating 912 men. Dr. Nasmyth said that the provision of pithead baths was one of the best sanitary reforms of recent years, and it was satisfactory that this matter was being dealt with all over the mining areas of the country.

Mr. J. B. Priestley and Mr. G. L. Stampa have collaborated in the preparation of an impressive foreword to an interesting little book issued by the Anti-Noise League of 18, Old Cavendish Street, London, W.1. Mr. Priestley, who confesses to having written the article while his ears were stuffed with cotton-wool in a vain attempt to secure a reasonable degree of silence, laments that "hardly anybody is busy inventing quietness." The book reveals that the Anti-Noise League, of which Lord Horder is chairman, has already accomplished a good deal of useful work during the ten months of its existence. It appears that the League was largely instrumental in securing the new Road Traffic Act provisions for silence zones in which hooting at night is prohibited and the placing upon manufacturers of the responsibility for fitting effective silencers to cars.

CORRESPONDENCE

Medical Education

Responsible Clinical Experience

SIR,—While a member of the Education Committee which has now reported to the Council and the Representative Body, I gave my support to what may be described as the main objective of the committee—namely, that the medical graduate should have the benefit of a period of responsible clinical experience before taking up the duties of public practice—I differed, however, from the majority of the committee as to the means of achieving this objective. As I was assured by the Chairman that an expression of individual opinion in the *Journal* would be considered by him a proper proceeding, even though it was at variance with the recommendations of the committee, and believing that the particular point of difference is an important one, I desire to put my alternative proposal on record.

The committee's recommendations achieve the end in view by:

1. Compressing the organized institutional tuition into a period of four years and three months.

2. Requiring the student, still a pupil and unlicensed to practise, to employ the remaining nine months of the five years' curriculum in some responsible clinical appointment.

My alternative proposition was:

1. To leave the period of organized institutional tuition unchanged (that is, five years), and to admit the student to the *Medical Register* at the end of this period.

2. To require from every so registered medical practitioner a period of one year in a responsible clinical appointment before a licence for *independent* public practice is granted to him. I proposed that this year should be spent either as a resident in hospital or as an assistant in general practice, or as both, according to the intentions of the individual practitioner.

The committee was influenced by two important considerations—that the curriculum should not be lengthened and that its expense should not be increased. Both requirements are met by both of these alternative propositions, but in my view my own alternative is the better in that:

1. It avoids the further compression of an already overburdened curriculum.

2. It avoids all the difficulties incident to the responsible and comprehensive employment in hospital or in general practice of an unregistered practitioner.

3. It ensures, in a simpler way, the two main requirements—adequate theoretical instruction and an adequate training in the public application of that instruction.

It is impossible to discuss details in a letter, and I must content myself with pointing out that the practitioner registered under the alternative scheme, but not independently licensed, would be worth a salary to a general practitioner or to a hospital sufficient to keep him, whereas the general practitioner and the hospital would have great difficulty in finding employment for a fifth-year student: the responsibilities which could be entrusted to him would be limited. Admitted that this difficulty might be evaded by an alteration in the "covering" regulations of the General Medical Council, but it is questionable whether the alterations which would be necessary are desirable.—I am, etc.,

London, W.1, Sept. 2nd. K. W. MONSARRAT.

Occupational Therapy

SIR,—Before the correspondence with the above heading is closed I would like to add my testimony to the great value of wisely directed work for cases of mental illness, especially when this is selected and organized under medical control. To be wisely directed, it must not be pressed to the point of fatigue, it must have the concurrence of the patient, and it must not appear to be an attempt to secure an equivalent return for treatment. It must also be regarded as wholesome and beneficial exercise for the individual concerned.

At the recent annual meeting of the Royal Medico-Psychological Association in Northampton, several members—who were entitled by personal experience—spoke of the necessity of work in the interests of health, happiness, and the welfare of the patient; but there was a general feeling that the euphuistic terminology of "occupational therapy" was no new treatment in mental hospitals. The same paper was also read in London at the annual meeting of the Society for Promoting Mental Hygiene, which further demonstrates the importance of the subject. The physiological effect of occupation as exercise is evident in the quickening of the circulation, the aeration and purification of the blood in the expanding lungs, an improved appetite and digestion, and the general tranquillity of the patient through the refreshing sleep that follows. The psychological effects noted are a keener observation, a help to fix the attention—and therefore a distraction from delusional states—the correction of undesirable habits, the encouragement of self-control, and an increase in the skill of the worker. There can be great delight in muscular exercise and an added interest can be kindled in the production of others, whose good opinion is shown in return, and this acts as a further incentive to effort. Your recent contributor (Dr. A. J. Brock, August 25th, p. 375) adds other incentives to "occupational therapy"—namely, self-expression and the satisfaction of creative striving—which offer further inducements.

In my early experience at Claybury, the first asylum of the first L.C.C., opened in 1893, the patients were infused with as lively an interest as the staff in evolving order out of chaos: new roads were made; the grounds and drives were planted and the gardens laid out by the voluntary help of patients. Many scores of standard rose trees were budded by patients and flower borders arranged and afterwards tended with gratifying results upon the recovery rate. In the last years of my administration, during the war, the L.C.C. extended "occupational therapy" by undertaking the manufacturing, in the asylum workshops, of munition shells for artillery guns, under the direction of the late engineer (Mr. W. C. Clifford-Smith). Many hundreds of steel shells were turned out and taken to Woolwich to be charged with explosives for the front. This is, I believe, the first public statement that munitions were made in an asylum, and probably it is a unique record. Finally, I would like to add that the corridors and workrooms still bear evidence of the aesthetic decoration of the walls by "occupational therapy."—I am, etc.,

Plas Dinas, Carnarvon, Aug. 28th. ROBERT ARMSTRONG-JONES.

Is High Blood Pressure a Risk?

SIR,—With reference to your correspondent's letter of August 25th (p. 370) I give the following experiences. I was once asked to examine lives for a certain insurance company. On my first visit two young men presented themselves, and both had systolic blood pressures in the vicinity of 150 mm. Hg. The next day the manager of the office and his worthy henchman assured me that my examination was unsatisfactory, as the blood pressure

readings were too high and would preclude their acceptance.

I must say that I had been provided with a sphygmomanometer by the company, and I was expected, though I did not then know it, to use the stethoscope method. This I did not employ, reading the instrument, which was an aneroid, when the pulse could no longer be felt. The manager forthwith blamed my "wrong methods" for the wrong readings. After some unpleasant discussion I indicated that perhaps his sphygmomanometer was wrong, since it was an aneroid. He repudiated this suggestion on the grounds (1) that it was the best possible make, and (2) that it had been recommended by a certain consultant. Not being intimidated by either (1) or (2), I forthwith took the sphymomanometer to a near-by instrument maker, where, with the aid of a "Y" connexion, I calibrated the aneroid against a mercury manometer. At about 150 mm. Hg the aneroid was exactly 11 mm. too high! Knowing the frequency with which aneroids are used and the trust with which physicians year in and year out use them for blood pressure readings, it is to be expected that many are badly out of calibration and their readings worthless.

In general practice I frequently come across cases of men and women (more often the latter) in whom the blood pressure has been very high for years and whose readings are more often in the neighbourhood of 300 than 200 systolic. I have one patient who has been in this state for the past seven years and is apparently none the worse. So much is this the case that I habitually tell a good and deliberate lie to patients as to what their pressures really are. Statistical investigations doubtless prove high blood pressures to be dangerous, but when it comes to a given patient there is no criterion whereby to judge the prognosis.

Average results are the bane of medicine and utterly useless to the individual, and as for insurance companies, anyone who has followed the trend of medicine for the last twenty years knows that, like the law, they are asinine.—I am, etc.,

Glasgow, Aug. 29th. THOMAS ROBERTSON.

The Swab in Diphtheria Diagnosis

SIR,—May I direct attention to a method I have found convenient during the last twenty-five years. It was, I think, originally suggested by Hewlett. Assuming a visit late at night to a doubtful case, when one may not have an outfit for taking a swab at hand, a hard-boiled egg is almost always obtainable. This provides, in my experience, a reliable culture medium. An incubator is not essential; the inoculated egg may, for example, be kept near the hot-water cistern. The culture can be examined the following afternoon, and very valuable time saved.

It would be too much to expect the average practitioner of the present to make his own diagnosis in this way, but why should the average practitioner of the future not do so?—I am, etc.,

Manchester, Aug. 29th. J. STAVELY DICK.

SIR,—With regard to the negative swab in cases of true diphtheria, perhaps an experience of mine in 1929 may be interesting.

I was called on August 5th to a case of nasal catarrh, and, being suspicious, took a swab: result, negative. A fortnight later I sent another with the same result. Four further cases, which had been in contact with the original, developed bad throats—swabs of all were negative. I injected all cases with 20,000 units of diphtheria antitoxin, and asked the county medical officer of health to come and inspect, as I was certain they were cases of diphtheria. Both county medical officers came down and took swabs. Some were sent to London and some to Exeter: result, negative to diphtheria, but the pneumococcus was found. Not until October 29th did I get a swab positive to diphtheria. Two patients died in a few days, and the eldest sister died of complete paralysis.

It appears to me that the pneumococcus has an inhibiting effect on the growth of the Klebs-Loeffler bacillus, either *in situ* or on cultivation. When I have had a report of streptococcus I have never had diphtheritic symptoms develop.—I am, etc.,

Lynton, North Devon, Aug. 22nd. ARTHUR P. CUMMINGS.

SIR,—In view of recent correspondence on swabbing throats in diphtheria, my last three cases bearing on this question serve to illustrate the difficulties from the general practitioner's point of view.

1. A young labourer presented himself at surgery with some slough on right tonsil. Not ill in himself, but had been home two days. I labelled him septic throat, did not give serum, but swabbed him. Two days later throat was quite clear of slough, and I told him he could return to work. Five minutes after he had left surgery I received result of swab by 'phone—positive! As he had a family of young children I had no alternative but to send him to isolation hospital. Four days later he was discharged with two negative swabs and "not clinically diphtheria" (with which, of course, I could only agree).

2. Ten days later I was called in to one of his children, suffering from "clinical diphtheria." I isolated her at home, gave 24,000 units, and swabbed. On receipt of positive result I sent her to hospital two days later.

3. A young married woman, with what I considered typical clinical diphtheria: I sent her into hospital straightway.' Seventeen days later she was discharged with the report, "Not diphtheria, but septic throat."

In theory, Nos. 1 and 3 should not have been sent to hospital, and No. 2 should have been admitted at once! Nevertheless No. 1 probably was a carrier, and possibly gave it to No. 2, who perhaps did not suffer much by delay in admission, as she got her serum immediately. Cases like No. 3 make one chary next time of sending a case straight into hospital.

It is quite obvious from the correspondence on this subject that I am not the only G.P. who could sign himself

August 28th. PERPLEXED.

*** Readers are referred to the annotation on this subject at page 476.

Typhus in the Tropics

SIR,—In the *Journal* of August 18th (p. 320) I notice a statement in the report of the discussion on typhus fevers in the Tropics which, if not amplified, may give rise to misunderstanding. Dr. J. L. Gilks is reported as having said that the first description of typhus in East Africa was given by himself in 1920. This is correct as far as it goes, but I am sure that Dr. Gilks does not mean it to be understood that he was the first to recognize that the disease, known for years in Nairobi as "dengue," was in reality mild typhus. The credit for this discovery belongs solely to Dr. G. V. Anderson, as I pointed out in a communication to the *Kenya Medical Journal* some years ago. The clinical and laboratory work which established Dr. Anderson's diagnosis was done by members of the Government Medical Service. The results were published by the Director of Medical and Sanitary Services, Dr. Gilks, in his annual report.—I am, etc.,

Belfast, Aug. 20th. P. A. CLEARKIN.

Rectal Prolapse Complicated by Procidentia

SIR,—The divergent views which have been expressed in the correspondence portion of your estimable *Journal* on the treatment of rectal prolapse is further proof that no universally successful operation has yet been evolved for the treatment of this most harassing condition. It seems to me that the ideal operation will only be evolved when our views on the aetiology of rectal prolapse are as well established as those on genital prolapse. The pre-eminent success of the Fothergill operation for the latter condition bears out the truth of my statement.

It is well known that rectal prolapse is common at the extremes of life and rare in adults. Beyond these known facts, the aetiology of rectal prolapse, as it occurs particularly in the adult, seems to be wrapped in mystery. Relaxation of the anal sphincter (and I include the levator ani muscles as part of the sphincter mechanism) may be a factor in the production of rectal prolapse, but, as we shall see, it is not the whole story. Jeannel and Verneul have called attention to the rarity of this condition after traumatism and destruction of the sphincter ani muscles, as, for example, after fistula in ano operations or in perineal lacerations. Stress is laid upon relaxation of the supporting structures of the rectum as an important aetiological factor but what precisely are these structures?

Some years ago I presented to the Obstetrical Section of the Royal Academy of Medicine in Ireland a case of complete prolapse of the rectum, complicated by procidentia. The partial cure obtained by surgical treatment in this case throws a certain amount of light on the aetiology and treatment of rectal prolapse. The patient was a nulliparous woman in the late forties. The first stage of the Fothergill operation for procidentia was carried out in the ordinary way. The second stage, which consists of a colpoperineorrhaphy, was slightly modified. The levator ani muscles, as well as being sutured to each other, were sutured also to the rectum. The external sphincter of the anus was exposed, as in the operation for complete perineal tear, and so plicated as to diminish the size of the anal orifice. The procidentia was permanently cured, and there was no recurrence of the rectal prolapse. A month or so afterwards, however, the patient developed a high rectocele. I had intended to perform a complete obliteration of the pouch of Douglas for the permanent cure of the rectocele, but the patient refused to have the operation. At present the rectocele is fairly well controlled by a ring pessary.

In order to appreciate the inferences which I think logically follow from this case it is necessary to understand the meaning and aetiology of a high rectocele. It is a protrusion of the rectum into the upper portion of the posterior vaginal wall and into the posterior fornix. It is due to the relaxation of the specialized portion of endopelvic fascia which maintains the rectum at its proper level in the pelvis. This consists on either side of a broad vertical band of dense fascia, which contains the middle haemorrhoidal artery, and which extends from the lateral aspect of the rectum to the pelvic wall at the point where the ureter enters the bladder. A high rectocele differs essentially from a low rectocele (the common type), which is a protrusion of the lower portion of the posterior vaginal wall, and which, on account of a mild inflammation of the cellular tissue plain, carries with it a portion of the anterior rectal wall. Should the sphincter ani be relaxed a high rectocele never develops.

In the light of the explanation of the significance of a high rectocele I believe I am entitled to draw the following conclusions from the results of my operation. That, in the adult at any rate, complete rectal prolapse, like a high rectocele, is essentially due to weakness, either congenital or acquired, of the true lateral supports of the rectum, and that weakness of the anal sphincter is a contributory factor. Rectal prolapse in the adult, therefore, is of the nature of sliding hernia. In the female, however, if the sphincteric mechanism of the anus is intact, a high rectocele may develop instead. If the view is accepted that relaxation of the sphincter ani is a contributory factor in the production of rectal prolapse in the adult, then an attempt should be made in the first instance to restore normal sphincteric control. In the female, then, the treatment for complete prolapse of moderate degree is a modified colpoperineorrhaphy. A few years ago a contributor to the *Journal* reported three cases of complete rectal prolapse in the female successfully treated by this method. In the adult a somewhat similar operation may be carried out by making an anterior curved incision in the perineum and continuing the operation by an approach much like that for a perineal prostatectomy. Lockhart-Mummery's operation for a moderate degree of rectal prolapse is successful in a large number of cases. It is a most inelegant operation, however, requiring a considerable amount of post-operative care and confining the patient to bed for weeks. In an *extreme* degree of prolapse, or in the event of a recurrence of the prolapse in the male, or the development of a post-operative high rectocele in the female, then an operation for the complete obliteration of the pouch of Douglas (Moschowitz's operation) should be performed.

As visiting surgeon for many years to a large children's hospital in Dublin, I have had the opportunity of seeing and treating many cases of rectal prolapse in children. Mucosal or partial prolapse is observed particularly in children, and complete rectal prolapse, unlike that in adults, is invariably preceded by mucosal prolapse. When the latter condition persists for some time the anal sphincter becomes stretched and temporarily weakened, and so the partial prolapse becomes complete. The mechanism of production of complete prolapse in children is, then, essentially different from the rarer form which occurs in adults. In children, operation for prolapse is rarely indicated, because healing practically always occurs spontaneously, and the anal sphincter regains its tone when the aetiological factors responsible for mucosal prolapse, such as diarrhoea, hernia, etc., are removed. Occasionally the prolapse persists in spite of appropriate treatment for the removal of the causal factors. It is in such cases, and in the intractable cases of old age, that injection treatment finds its most fruitful application. Personally I have not tried this method of treatment in children.

I have found the simple rectopexy operation, so accurately described by a recent correspondent, almost invariably successful in the treatment of intractable rectal prolapse in children. That the injection of alcohol or any other drug into the perirectal tissue should permanently cure a case of complete prolapse in which the supporting structures of the rectum, as well as the sphincteric mechanism of the anus is permanently damaged, is too much for my credence.

—I am, etc.,

D. J. CANNON, M.B., B.Ch., M.A.O.
Infirmary House, Kildare, Aug. 27th.

Menorrhagia after Splenectomy for Purpura Haemorrhagica

SIR,—Your readers may be unduly influenced by the success attending splenectomy for menorrhagia as recorded by Dr. Stanley Hartfall and Mr. Carlton Oldfield in your issue of July 7th (p. 8), with encouragement in a later issue by Dr. Bernard Myers (August 11th, p. 284). The purpose of this letter is to show the other side of this question.

Splenectomy for purpura haemorrhagica was introduced into this country by Dr. G. A. Sutherland, assisted by the writer, in 1924, with two cases recorded in the *Lancet* in February, 1925. Dr. Parkes Weber was our source of information on the origination of this treatment by Kaznelson of Prague in 1919. The post-operative histories of our original two cases, which were classical examples of the so-called essential thrombocytopenic purpura haemorrhagica, clearly show that splenectomy is certainly not the solution of the problem.

During a post-operative period of ten years one of these patients, a female, has had many serious haemorrhages, and at the onset of her menses five years after splenectomy menorrhagia reduced the numbers of red cells below two millions, and she lay in hospital for many weeks. For a period of eighteen months following the operation all signs of purpura haemorrhagica disappeared. After this they gradually returned, and her constant state now is one of purpura simplex—that is, petechiae and ecchymoses are seldom absent—but, in addition, she has occasional epistaxes. The third patient whose case

was reported in our original article, and who was later subjected to splenectomy, is in the same condition as the case just described: she has skin manifestations of the condition as a constant feature, occasional external haemorrhages, and a definite tendency to menorrhagia.

Splenectomy has established itself beyond doubt as an emergency measure in purpura haemorrhagica. In my experience, apart from such a state of emergency, it has been completely disappointing. Our original cases at the present time can be diagnosed clinically at sight, and the blood state shows a constant thrombocytopenia despite the removal of the spleen. This has been recorded by others. The spleen is only one unit in the reticulo-endothelial system, and if this system is the primary fault the rest of the system appears to be able to ensure the continuance of the disease.

Experience has modified my views during the past ten years. I now look upon purpura haemorrhagica as a manifestation of obscure infection in which the capillaries are especially prone to attack. The platelets disappear from the circulation because these are employed in caulking the damaged vessels. Measures to raise the general standard of health by eradicating sepsis, combating anaemia, and attending to the diet have brought me more permanent results, and I now reserve splenectomy for cases of utmost emergency where haemorrhages endanger life.—I am, etc.,

London, W.1, August 23rd. BRUCE WILLIAMSON.

Treatment of Phlebitis

SIR,—Thrombosis and subsequent phlebitis of the saphenous vein and its tributaries is very common, especially among females, and causes considerable loss of working time. Treatment has always been most disappointing. Some patients, unable to bear the pain, seek their beds, and lie there for months courting pulmonary embolism through clotting of the internal iliac veins; others walk about and appear to do as well as, if not better than, the recumbent cases. The exhibition of massive doses of potassium citrate has been recommended, but it is difficult to understand how this substance taken by mouth can affect a clot, still less have any effect on the inflammation.

Mr. Dickson Wright's treatment of encasing the whole leg from the toes upwards is the only one I have known to be of any avail. I have used it in two cases since reading his article. One had been under treatment for months, the other was a recent one of clotting only; both patients had varicose veins. As a modification I used animal wool over the areas of thrombosis. This wool shows no tendency to mat and is very elastic, for which reasons it is used by chiropodists. The result in both cases was most gratifying.—I am, etc.,

A. P. BERTWISTLE, F.R.C.S.Ed.

London, W.1, Aug. 23rd.

Thrombosis of the Penis

SIR,—I am very glad to see Mr. Clifford Morson's extremely clear explanation of the difference between the terms "priapism" and "pseudo-priapism" (*Journal*, August 25th, p. 371), though it makes the title of a paper which I wrote long ago ("Persistent Priapism from Thrombosis of the Corpora Cavernosa," *Edinburgh Med. Journal*, new series, 1898, iv, p. 267) contain a contradiction in terms. With the progress of knowledge the definition of terms has, I admit, not rarely to be modified or altered, especially for teaching purposes, and Mr. Morson's definition is certainly more intelligible to me than Dr. G. W. Theobald's statement (*Lancet*, 1922, ii, p. 506): "Priapism is not synonymous with 'prolonged erection' or with satyriasis, but is a condition in which the penis is erected without there being any associated sexual excitement."

I must apologize for having at first doubted the advisability or necessity of Mr. Morson's use of the term "pseudo-priapism," but doubt, just as hope, springs eternal in many human breasts, and now I find myself doubting whether Priapus himself—standing day and night through all kinds of weather in the fields and groves of the ancient classical world, always exhibiting his enormous and erect phallus—may not have been, after all, a sufferer from some kind of vascular *pseudo*-priapism.

I am sorry that I have no information to give Mr. Morson as to subsequent history of impotence, etc., in the few leukaemic and non-leukaemic cases of penile thrombosis which I have seen.—I am, etc.,

London, W., Aug. 25th. F. PARKES WEBER.

"Closed" Anaesthesia

SIR,—I am struck by the following passage in your leading article on the above subject (August 25th, p. 360):

"The author notes that 'relative overdosage'—a phenomenon long familiar to anaesthetists—which means, in a sentence, that a given saturation of the blood by anaesthetic agent produces a deeper level of anaesthesia in the later than in the earlier stages of an administration, occurs much more noticeably in nervous than in stolid patients . . . that in the latter type a larger proportion of the drug used is absorbed into the blood."

It is then suggested that this is due to some physical difference in the blood of these different types of patients. This appears to conflict so much with clinical experience and with the theoretical evidence of such men as Crile and Henderson that I venture to disagree with this last statement, and for the following reasons.

In a closed system of anaesthesia once the level of anaesthesia has been reached which is desired clinically the supply of anaesthetic agents is stopped, and with an airtight system the anaesthetic content is from this time on a constant fixed amount. The contents of the system are in gaseous equilibrium with that of alveolar air, which is in turn an accurate measure of the gas pressure to which blood leaving the lungs is saturated. Thus, for this level of anaesthesia, the anaesthetic content of the blood will be in equilibrium with the contents of the closed system, which is a constant fixed amount. In these circumstances it follows that when this relative tolerance does appear it cannot be due to an increase in the anaesthetic content of the blood, for until more anaesthetic agent is added to the system the anaesthetic content of the blood cannot rise, as it is in gaseous equilibrium with the contents of the system. Since in closed anaesthesia the control which one has over the anaesthetic agents used is absolute, one can vouch for the degree of blood saturation and its maintenance once the level of anaesthesia desired clinically has been attained.

If alterations occur in the patient's clinical condition these alterations must therefore be due to an altered reaction on his part—an increased susceptibility to that quantity of anaesthetic agent already present. In the nervous or the toxic patient this relative tolerance occurs earlier and more readily, and one must take it that his psychic or toxic state predisposes to the earlier onset of this phenomenon. Clinically one has come to look upon this phenomenon as a sign of incipient surgical shock. Crile's definition of shock is "a state of exhaustion which has been rapidly developed by psychic, traumatic, toxic, or thermal stimuli." His researches denoted that the psychic factor incident to major operations was exceedingly important: it was sufficiently powerful to overwhelm the patient, so that in some cases death was due to the emotional factor alone. I have seen just such a case.

If a basal anaesthetic is employed the nervous patient comes to the theatre freed from the influences of the higher cerebral centres. He is in effect a standard physiological preparation, in much the same manner as a decerebrate animal, and will consequently react in a standard physiological manner to a given set of conditions brought about by the anaesthetist. Patients so prepared do not so readily show signs of relative tolerance, but react after the manner of the stolid type. In closed anaesthesia a relative tolerance can develop apart from this toxic or nervous type. I believe this to be due to a too complete absorption of carbon dioxide by the soda lime, which lowers the carbon dioxide tension of the blood. This depresses the respiratory centre and reduces the amplitude of respiratory movement which, by preventing the relaxation of the heart in diastole, hinders the venous return and makes a circulatory failure possible as a result of the diminished cardiac output. Of equal importance is the production of an anoxaemia of the anoxic type. In spite of the fact that the oxygen tension in the blood is adequate, oxygen is not readily available owing to the low carbon dioxide tension hampering the dissociation of oxyhaemoglobin. By increasing the carbon dioxide contents of the system this clinical condition is rapidly rectified. If these causes have been allowed to act for too great a length of time the oxygen supply must also be increased. In event of an increase of carbon dioxide and oxygen failing to rectify the clinical condition of relative tolerance, the inference is that the causes have been acting for too great a length of time, and consequently the damage has been done and surgical shock is actively present. In this state the condition of relative tolerance or susceptibility—I would prefer to call it shock—has been established, and a reduction of the pressure of the anaesthetic agent in the system is necessary to reduce the tension of anaesthetic in the blood. At the same time the routine treatment of shock is instituted.

In a closed method of anaesthesia one can recognize clinically a "pre-relative tolerance" stage, a relative tolerance stage, and, finally, the stage of established surgical shock. The pre-relative tolerance stage is manifested by irregularities in, or shallowness of, the amplitude of respiratory excursions as shown on the manometer. The use of the carbon dioxide by-pass valve will rapidly rectify matters. In the relative tolerance stage, again, there are irregularities of respiratory movement, depressed breathing, and inspiratory tugging. The blood pressure falls, the pulse becomes full and soft, and may become rapid. These two stages are "pre-shock" stages, and are relieved by the exhibition of carbon dioxide, or carbon dioxide and oxygen. Shock is not established, and consequently, if those forces acting to produce it are relieved, its advance is arrested. This becomes a therapeutic test, for if the condition is not arrested then one can be perfectly sure the patient has reached the third stage—the state of surgical shock.

These facts lead one to consider that relative tolerance or overdosage is not due to any physical peculiarities of the blood *per se*, but rather to an increased tolerance—in effect, the early onset of shock. Its incidence can be reduced by the use of basal anaesthetics. In a closed system of anaesthesia it offers a reliable clinical index of approaching surgical shock. The physiological regulation of that hormone of the respiratory system, carbon dioxide, which in a closed system can be accurately controlled, will reduce the incidence of surgical shock, delay its onset, and provide a reliable guide as to whether it is actually established. A survey of surgical shock in anaesthesia and the relative value of different agents and methods is being investigated at present, and will be the subject of a future communication.—I am, etc.,

London, W.6., Aug. 29th. T. A. B. HARRIS.

Treatment of Lupus Vulgaris

SIR,—Dr. Burnell-Jones is evidently of opinion that, however extensive the trials of tuberculin in lupus may have been in the past, they have not been adequate, and that the clinical work now in progress in London and elsewhere is likely to remedy the defect. I agree entirely with him on both points.

The London work to which he refers is described in a paper by Dr. H. Semon and himself entitled "Tuberculin in the Treatment of Cutaneous Tuberculosis," and published in the *Proceedings of the Royal Society of Medicine* (January, 1934). In this the authors describe cases of lupus showing definite improvement under progressively increasing doses of tuberculin B.E., rising to large quantities. If this work, on visible cases where we can see what is happening, is steadily continued for a sufficient length of time, we shall at last obtain material from which to learn the truth about the value of tuberculin, not only in lupus, but eventually in other forms of tuberculosis as well. Lack of the Hunterian method, carried out with intimate knowledge of Koch's work, has been to a large extent responsible for the inadequacy of the investigations into this subject in the past.

An article by Sir Malcolm Morris and Dr. Arthur Whitfield, entitled "Six Cases of Lupus Vulgaris Treated by Koch's New Tuberculin" (*British Medical Journal*, 1897, ii, 207), is almost the only serious attempt reported in this country to confirm in lupus Koch's completed work on tuberculin. This article still merits close attention, but the work was too soon abandoned, owing apparently to the introduction of Finsen light treatment, or to being diverted by the opsonic index and fear of dangerous consequences—strangely enough after the authors had reported "full confirmation of the good effects referred to by Koch" and remarkable improvement in the cases treated.

It is greatly to be hoped that the work now in progress in London will not be hampered by want of support. Those who have worked at this problem know how heavy are the demands it makes on time, energy, and staying power. There are sufficient funds in the hands of the Medical Research Council and other bodies entrusted with the patronage of medical research to subsidize work of such potential practical value. I have no hesitation in calling upon all who are in sympathy with these views to unite in creating the demand for support of every description for one of the most promising, long overdue medical researches of our time.—I am, etc.,

London, S.W., Aug. 26th. ROBERT CARSWELL.

SIR,—In a letter from Dr. H. S. Burnell-Jones, published in the *Journal* of August 25th (p. 375), he declares that "it is wrong and unscientific to condemn tuberculin without an adequate trial. The endeavour should be made to learn how to use it."

It is pertinent to inquire on what grounds Dr. Burnell-Jones charges the medical profession with not having given tuberculin an adequate trial. Tuberculin has now been before the profession for some forty years. Having been widely given up after its first rather disastrous start, it was re-boomed about 1911. For some years it was tried on a most extensive scale, so much so that letters appeared in the *Journal* expressing a fear of tuberculosis dispensaries becoming "tuberculin dispensaries." Possibly these events do not fall within the memory of Dr. Burnell-Jones.

Further, he quotes Dr. Lomholt as saying—with regard to the use of tuberculin in lupus vulgaris—that it "had been tried extensively at the Finsen Institute," so we are left to infer that he does not consider this extensive trial at the Finsen Institute to have been an "adequate

trial," because the result was that tuberculin had been abandoned. Dr. Burnell-Jones thinks that we never learnt how to use it. Perhaps he will be kind enough to explain how our methods were all wrong, and what is the proper method as known to him.

We agree that "it is wrong and unscientific to condemn tuberculin without an adequate trial," but we deny the impeachment (which is surely just a little presumptuous on the part of Dr. Burnell-Jones), and we would point out that it is equally wrong and unscientific to credit tuberculin with the cure of tuberculosis on the strength of occasional good results in a disease which, as common experience shows, provides many instances of improvement or arrest of disease by the *vis medicatrix naturae* alone. He must produce satisfying evidence, supported by proper controls. Also, to talk of "widely different actions [of tuberculin] in different individuals" is simply to hedge. Not so do we speak of those specific remedies which have proved to be trustworthy in other diseases.—I am, etc.,

E. WEATHERHEAD.

Southborough, Tunbridge Wells, Aug. 26th.

Haemorrhage from Peritonsillar Abscess

SIR,—Both Professor J. B. Dawson (August 11th, p. 284) and Mr. Charles MacAuley (August 25th, p. 371) consider it wiser to tie the external, rather than the common, carotid in cases of haemorrhage from a peritonsillar abscess. I would remind them, however, that the tonsil is partly supplied by the descending palatine branch of the *internal* carotid (Cunningham). Should the bleeding originate from this source, ligature of the external carotid alone would certainly not "meet the case." Ligature of the external carotid will undoubtedly stop the majority of haemorrhages from the peritonsillar region, but the exceptions will most likely prove fatal. Any considerable further haemorrhage would certainly have killed my patient, and this fact was kept in mind when deciding which artery should be tied. Perhaps the best procedure would be to ligature the external carotid, and at the same time to leave a stout catgut ligature loosely around the internal carotid, ready to be tied at a moment's notice. Alternatively one could dissect out the tonsil and look for the bleeding vessel in its bed, as has been already suggested.

Both Professor Dawson and Mr. MacAuley comment upon the operative difficulty caused by swollen lymph glands. This was not present in my case, presumably because of the long interval which had elapsed between the bursting of the quinsy and the ligature of the artery.—I am, etc.,

T. G. WILSON.

Dublin, Aug. 27th.

Use of "Oil" Vaccine in Rheumatism

SIR,—In the *Journal* of August 25th Drs. Walsh and Frazer (p. 374) ask the size of the globules in the dispersed phase of the "oil" vaccine described in my letter (*Journal*, August 4th), stating that in their experience globules of a size of 2 to 2½ μ are too large to be of any value (2 to 2½ mμ, as their letter states, is no doubt a misprint—2 $\mu\mu$ would, of course, be much too small to measure).

In our oil the average size of the particles is 1 μ, gum acacia is used for protection, and the emulsion is rendered isotonic with mannite. The oil is sterilized by heat and preserved by 0.3 per cent. tricresol; 1 c.cm. of vaccine in carbol saline is then added to 9 c.cm. oil emulsion at 37° C. After an hour or two it is allowed to cool. We have found that the addition of the protective to the emulsion prior to the adsorption of vaccine is in no way detrimental, and the isotonicity obviates any local reaction at the site of injection. This, then, is the general "oil" vaccine which the staff of the Charterhouse Rheumatism Clinic has now used in a considerable number of cases.

Experimental work is proceeding under Dr. Harry Coke's direction in order to determine: (1) a clinical elution isotherm in relation to the size of the particles and the relative surface available (at the other end of the scale we are therefore using a 50 per cent. protected isotonic emulsion of olive oil in which the average size of the particles is the same and the available surface very large); and (2) the effect of the chemical constitution of the dispersed phase. Here an attempt is being made to determine the relative value of other colloids in producing specific immunity and desensitization phenomena. We are trying colloidal cholesterol, calcium, and magnesium oleate (with an average size 0.1 μ), calcium and magnesium phosphates and hydroxides, and, perhaps most important of all, the selective adsorption of calcium or magnesium salts with vaccine on a neutral colloid, such as silica. The preparations, as before, are by British Colloids, Ltd.

I should add that no means are taken for solution of the bacterial content of the vaccines. Partial autolysis is always to be found in vaccines prepared from broth cultures and put up in carbolized saline.—I am, etc.,

H. WARREN CROWE.

London, W.1, Aug. 30th.

"Port Sanitation and Common Sense"

SIR,—The article, so ably written by "A Ship Surgeon," in the *Journal* of August 25th raises many points of interest and calls for some comment.

His remarks anent "bills of health" are sound and true, but it is worth emphasizing that the reason for their loss of value is due to two things. First, news nowadays travels faster than the ship, hence the bill of health is out of date and valueless by the time a vessel reaches any port a reasonable distance from the port of origin. Secondly, thanks to the work of the International Bureau of Hygiene at Geneva, a weekly confidential list of all ports where infection exists, together with facts and figures, is circulated to all port medical officers, who are thus kept strictly up to date in information. With regard to British bills of health they are at least issued free, and not like some foreign ones where fabulous sums have to be paid for a piece of paper the philatelic interest of which far exceeds any potential or actual value. In the second part of your correspondent's paper, under the heading "Ship Hygiene," I think his outlook and picture are drawn from the interior of a first-class liner. Has he inspected many cargo vessels and smaller fry of the "tramp" class?

It is in the last part of his article, in which he criticizes port authorities, that I would cross swords with "Ship Surgeon." Abroad things may be out of date—in many cases I know they are. In Great Britain the port authorities have a very definite reason for every measure they take, and I cannot recall, or think off-hand of, a single matter which could be reasonably cavilled at. I agree that the status of the ship surgeon has improved, and in the larger companies, where something approaching a permanent career is offered, the best type of doctor is obtained. Port authorities have to consider *all* types, however, both British and foreign, and one cannot make one routine for the one and a different routine for the other.

The question, "Have you had any illness on board, whether of an infectious nature or not?" is most important, as "Ship Surgeon" promptly proceeds to substantiate in his succeeding remarks. Port medical officers *have* both the time and the patience to listen to a recital of the bo'sun's lumbago, the carpenter's rheumatism, and the steward's diarrhoea; for there at once lie the potential

and perhaps ambulatory cases of small-pox, gonorrhoeal sequelae, and typhoid fever, to name a few. The mere mention of the diagnoses "Ship Surgeon" gave would at once excite in the mind of a port medical officer such possibilities, and *quite possibly* would *not* have aroused suspicion in the mind of the ship's surgeon. Having been "let down" by each of these three types of case, I can speak with feeling on that point. I feel that I should personally treat "Ship Surgeon" with some suspicion if he declined to answer that question properly.

Surely he has taken the parochial outlook rather than the broad view with regard to port authorities. Does he not realize that they are out to help and not to hinder? The port medical officer, even abroad as well as at home, has special qualifications for knowing the major infectious diseases when he sees them, and in most instances meets them so frequently that he has the practice as well as the knowledge. Let the ship's surgeon therefore avail himself of a second and expert opinion whenever he can, lest one day he trip up over the differential diagnosis between his pimples and his small-pox. The port medical officer knows the local facilities for dealing with "the commander's indigestion" and "the stewardess's debility," not to mention "the fireman's whitlow," etc., and if assistance in landing and catering for these cases is required the port authority will help in the matter.

In short, the port authority does its best to take all the responsibility possible off the hands of the ship's surgeon, and it is up to him "to deliver the goods." In conclusion, let "Ship Surgeon" remember that most port medical officers know his difficulties, and most of them have been through them in the past; but whereas his charge is the relatively small "parish" of the ship the port medical officer's "parish" is the entire population of the country whom it is his duty to protect from imported disease.—I am, etc.,

August 26th. "A PORT MEDICAL OFFICER."

Pineapple Juice in Oedema

SIR,—I should like to add another old-fashioned remedy to Dr. F. C. Bottomley's list for the treatment of oedema (as reported in the proceedings of the Section of Medicine, *Journal*, August 18th, p. 315). At Broken Hill (Australia) in 1929 I saw a case of cardiac oedema in a woman of 30 with a patent ductus arteriosus completely relieved in three weeks by the daily administration of pineapple juice. When the treatment was started the patient was oedematous to the waist, and there was fluid in both pleural cavities. Digitalis, mercurial compounds, and so on had been tried without success, and the pleural sacs had been drained and were filling up again rapidly. She was given the juice from a tin of pineapple daily, and in a fortnight her urinary output had risen from 18–20 oz. to 60–100 oz. in twenty-four hours. The oedema of her back and legs completely subsided and the fluid disappeared from the pleural cavities in about three weeks. The patient left the hospital, reporting some months later still apparently free from oedema: she was then consuming one tin of pineapple per week. The pineapple juice was administered in the first place because I was told that it was a good old-fashioned remedy for reducing the swelling of sore throats and quinsies, and nothing seemed to be doing the patient any good. The action of the juice may have been due to some essential constituent of the pineapple or to its sugar content, but this point has not been investigated. The case was fully reported in the *Medical Journal of Australia* in 1930.—I am, etc.,

BRIAN MAEGRAITH.

Sir William Dunn School of Pathology,
University of Oxford, Aug. 21st.

Universities and Colleges

UNIVERSITY OF CAMBRIDGE

During the months of June and July the title of the degree of B.Chir. was conferred by diploma upon C. M. Cavell and D. J. Thompson (Newnham College), and R. A. Kellgren (Girton College).

Charles Montague Fletcher, B.A. (Trinity College), has been elected to the Michael Foster Research Studentship.

The General Board gives notice that the composition fee for all medical students and for other students reading for the Natural Sciences Tripos, Part I or Part II, or for the Preliminary Examination in Natural Science, will be as follows: For undergraduates in their first, second, or third year an annual composition fee of £45, payable in three equal terminal instalments of £15; for students in their fourth year a terminal fee of £8.

The *Cambridge University Reporter* of August 14th included a list of lectures and courses of practical instruction in medicine, surgery, pharmacology, therapeutics, and pathology, and for the Diploma in Medical Radiology and Electrology, approved by the Board of the Faculty of Medicine for the academic year 1934–5.

SOCIETY OF APOTHECARIES OF LONDON

The following candidates have passed in the subjects indicated:

SURGERY.—F. A. Frank, F. M. Kerry, J. T. Moohalaparackel.

MEDICINE.—S. Adams, T. D. R. Aubrey, M. T. Curran, A. H. El. S. El Mahallawy, R. C. H. Ensor, F. A. Frank, W. H. Jervis, C. W. O'Donoghue, J. F. Owen, H. Paroulakis, D. Walton.

FORENSIC MEDICINE.—F. G. S. Alderson, F. A. Frank, W. H. Jervis.

MIDWIFERY.—J. A. Amor, N. A. Bicchieri, D. P. Hickey, F. M. Kerry, K. P. Pauli.

The diploma of the Society has been granted to F. G. S. Alderson, M. T. Curran, J. T. Moohalaparackel, C. W. O'Donoghue, J. F. Owen, and H. Paroulakis.

The Services

AWARDS

The Gilbert Blane gold medal for this year has been awarded to Surgeon Lieutenant-Commander T. C. H. Neil, M.B., Ch.B., who obtained the highest aggregate marks at the examination for the rank of Surgeon Commander.

The King has conferred the Efficiency Decoration of the Territorial Army upon Lieut.-Colonel C. H. Budd, M.C., and Major V. H. Wardle, M.C., R.A.M.C.(T.A.).

DEATHS IN THE SERVICES

Lieutenant-Colonel Edmund Hasell Wright, Madras Medical Service (ret.), died at Woking on August 13th, aged 65. He was born at Masuri on September 16th, 1863, the son of George Augustus Wright, indigo planter, and was educated at St. Thomas's, taking the M.R.C.S., L.R.C.P. in 1887. Entering the I.M.S. as surgeon on March 31st, 1890, he became lieutenant-colonel after twenty years' service, and retired on November 8th, 1921. After fifteen years' military duty he was appointed civil surgeon and superintendent of the medical school at Tanjore in 1906, and civil surgeon of Merkara, Coorg, in 1916.

Major James Lafayette Lauder, D.S.O., M.C., R.A.M.C. (ret.), died on July 18th, aged 45. He was born on June 18th, 1889, the son of J. S. Lauder, Esq., and was educated at Dulwich and at Guy's, and took the M.R.C.S., L.R.C.P.Lond. in 1913, and the M.R.C.P.Ed. in 1916. He took a temporary commission in the R.A.M.C. on August 8th, 1914, was confirmed as lieutenant and temporary captain on January 1st, 1917, became captain on February 8th, 1918, and major on August 8th, 1926. He went on temporary half-pay on account of ill-health on August 17th, 1932, and retired two weeks later, on August 31st, 1932. He served throughout the war of 1914–18, was mentioned in dispatches in the *London Gazette* of December 11th, 1916, and December 24th, 1917, and received the D.S.O. and the Military Cross, the former for his services during the typhus epidemic of 1916 in the Wittenberg prisoners' camp.

Obituary

ROBERT ALEXANDER GIBBONS, M.D.,

F.R.C.P.Lond., F.R.C.S.Ed.

Consulting Gynaecologist to the Grosvenor Hospital for Women

We regret to record the death in London, on August 23rd, of Dr. R. A. Gibbons, the well-known gynaecologist. Born in Canada, he studied medicine at Edinburgh, graduating M.B., C.M. in 1874, and M.D. in 1877. Five years later he took the F.R.C.S.Ed. and the M.R.C.P.Lond.; he was elected F.R.C.P. in 1932. Dr. Gibbons held resident appointments at the Royal Infirmary, Edinburgh, and was for two years R.M.O. at the East Suffolk and Ipswich Hospital. He later obtained the post of resident medical officer to the Great Ormond Street Hospital for Children. Settling in a house in Cadogan Place in the 'nineties, he soon built up a large and fashionable practice, and it was not long before he became known to a wide and important circle in London. He held the appointments of obstetric physician to the St. George's and St. James's Dispensary and the Royal Pimlico Dispensary, but it is in connexion with the Grosvenor Hospital for Women, Vincent Square, that Dr. Gibbons is best known. He was the founder of this hospital, which began in a very small way in two houses in the Square, and it was owing largely to his energy and enthusiasm that the present well-equipped hospital was built. He collected considerable donations for it from his rich and grateful patients, and the hospital is, in truth, his child. He spent a large portion of his life doing excellent work there, and at his death was the senior consulting gynaecologist. Dr. Gibbons contributed a number of papers to medical journals and also the articles on dysmenorrhoea, sterility, and dyspareunia in Latham and English's *System of Treatment*. He also wrote two brochures on sterility in women and another on the causation of labour, a subject in which he was greatly interested and to which he devoted much thought, industry, research, and experiment. He had been a member of the British Medical Association for nearly sixty years, and was vice-president of the Section of Obstetrics and Gynaecology at the Belfast meeting in 1909.

Sir JAMES DUNDAS-GRANT writes:

The death of Dr. R. A. Gibbons will be a blow to a large circle of patients, friends, and fellow practitioners. For his patients it will be difficult to find an adviser who, in addition to having good judgement and skill, possesses in so high a degree his qualities of tact, delicacy, and sympathy, which are particularly indispensable in one who devotes himself to the obstetrical and gynaecological department of medicine. His personality, brightness, and loyalty endeared him to many friends, lay and professional. One who was a few years his junior when he was house-surgeon and house-physician at Edinburgh well remembers the example he set of business-like intensity in his devotion to work, and the consistent maintenance of the dignity of his calling in his conduct and bearing, even down to his preciseness in dress. The demand in London for his services as an obstetrician was so great that he decided not to accept the post of obstetric physician to a teaching hospital, as he felt unable to devote to it the amount of time that would have been required for the conscientious performance of the duties as he conceived them. Among those who will deplore his loss will be the members of the Order of St. John of Jerusalem, in which he held the position of Knight of Grace, and many freemasons of all ranks. Up to the last he enjoyed his round of golf and maintained his appearance of youthful freshness, to which moderation in diet and regimen no doubt contributed. He took the serious things of life with seriousness, the lighter ones with good humour, and in more ways than one he was an ornament to his profession.

Sir GOULD MAY writes:

From the very beginning Gibbons's success in practice was phenomenal. Having studied under Lister in Edinburgh, he fully realized the importance of antiseptics, and he may be said to have been one of the pioneers of aseptic midwifery in London. A man of fine presence, courteous manners, and most generous instincts, he was always anxious and willing to help the younger man, while he was never puffed up by his wonderful success. Few doctors have been more beloved by their patients, and he will have the only monument worth having—a safe place in the hearts of all those who knew and loved him.

CECIL W. HUTT, M.D., M.R.C.P., D.P.H.

Medical Officer of Health for Holborn

The sudden death of Dr. Cecil W. Hutt, medical officer of health for the Borough of Holborn, at the comparatively early age of 54, removes a public official of undoubted distinction.

He was a Londoner by birth, and while at St. Paul's School he showed those gifts of scholarship which remained with him throughout his life. In 1898 he gained an exhibition to Trinity College, Cambridge, taking his B.A. in 1902 with a first class in the Natural Sciences Tripos, Part II. Then followed his medical training at St. Bartholomew's Hospital, where he was awarded the Matthews Duncan Prize and Brackenbury medical scholarship, qualifying in 1905.

After holding several clinical appointments he took the Oxford D.P.H., entering on his public career as assistant M.O.H. in Warrington, and later as deputy to Dr. Duncan Forbes, medical officer of health for Brighton, with whom he remained on the most intimate terms of affectionate friendship. He always looked back on the years at Brighton as the time of happy apprenticeship, and remembered with gratitude the valuable and varied experience he acquired there. There was much to do in Brighton during the war, for in that city was established the chief hospital organization for the Indian contingents, and the incidence among them of infectious disease, such as cerebro-spinal fever, gave much anxiety to civilian health officers there as elsewhere. As soon as he could be released Hutt joined the Army, and after a period of service in home commands was drafted to Egypt, where he had the misfortune to contract dysentery in a severe form. There is little doubt that the after-effects of this infection remained, and played a part later in undermining a constitution normally robust.

Soon after the war he was appointed medical officer of health for Dudley, and later for Richmond, Surrey, but it was not until 1921 that he succeeded the late Dr. Bond as medical officer of health for Holborn. A metropolitan borough does not offer so wide a field for an official of imagination and initiative as an area of comparable size in the provinces, but Dr. Hutt soon set the seal of energy and progress on the health services of the borough.

He found most scope in the newly developing maternity and child welfare movement, and to-day it would be difficult to find anywhere a more complete or better-organized service. He was the first medical officer of health in London to grasp the value of protective immunization against diphtheria, and his scheme for the general population was probably the first in operation in England. He was a Fellow and member of the Council of the Royal Institute of Public Health, Fellow of the Society of Medical Officers of Health, one of the founders of the School Medical Service Group, and took a prominent and executive part in the activities of the National Baby Week Council and the National League of Health Maternity and Child Welfare. Further, he occupied a position of considerable responsibility as the medical member among the advisory experts attached to the special subcommittee of the Metropolitan Standing Joint Committee which is dealing with the urgently important question of refuse disposal in London.

Hutt was a lucid and facile writer, and throughout his public career contributed very frequently to the medical and health journals on a variety of subjects dealing with public health. Among these may be mentioned "The Urgent Need of Reform of the Sale of Food and Drugs Act Administration (Public Health)" and "Diphtheria Immunization in a Metropolitan Borough (*Lancet*, 1925). School hygiene was the subject of his special interest, and he wrote a number of articles embodying much original thought both in French and in English journals. He was the author and part author of a number of text-books, perhaps the earliest and best known being his *Hygiene for Health Visitors, School Nurses, and Social Workers*—one of the best books of its kind ever published. He collaborated with several others in bringing out a later edition of that excellent textbook, Sir William Hamer's *Manual of Hygiene*, and at the time of his death had almost ready for publication a more ambitious work on preventive medicine under the co-editorship of Dr. Hyslop Thomson. Travel abroad was one of the joys of Hutt's existence. Difficulties or discomforts in the means of travel never dismayed him, and he would be happy even to tramp rather than miss an interesting place or people. He had an intimate knowledge of many parts of the Continent, and often while on holiday made a point of studying health administration and institutions in different lands. These visits were afterwards recorded in such journals as *Health, National Health*, etc. Possessed of a wide and detailed knowledge of the whole subject of public health, he was able, as a lecturer to the D.P.H. students of the Royal Institute of Public Health and to the undergraduates at Charing Cross Hospital, to present the subject in an illuminating and impressive manner.

He was a man of the most kindly and generous disposition, always willing and helpful if approached, but extremely modest and most unwilling to thrust himself forward. As an old friend once wrote of him: "An unassuming worker whose quiet endeavours to gather knowledge and to aid others inspire his colleagues with a sense of fellowship and partnership in the common work." He retained his youthful appearance, and sometimes associated with it a delightfully boyish shyness. Rarely did he speak harshly of anyone, and even for those who might occasionally merit a bitter word he almost apologized with a deprecating smile. He applied to the problems of public health a finely imaginative and constructive mind; his outlook on the issues which emerge in the unfolding of this scroll of knowledge was philosophic. Hutt looked across and beyond the questions of the hour to the horizon of the future, and the ideas he expressed were the products of a highly cultivated intellect. But he likewise possessed the ability to put those ideas into practical form, and many a scheme which he has brought into execution serves, and has served, as a useful pattern to others. He was whole-heartedly devoted to his profession, and there is little doubt that he sacrificed his life to a passion for work. His health had broken down earlier in the year, and he returned after a period of rest and change, but far from fully recovered. The demands of his official work and those entailed by the completion of his latest textbook were more than an already overtaxed constitution could bear. So he has passed on in middle life while intellectually at the height of his powers, leaving behind him the sincere regrets of many friends and colleagues.

E. D. MACNAMARA, M.D., F.R.C.P.

Consulting Physician for Psychological Medicine, Charing Cross Hospital

We regret to record the death, on August 24th, at the age of 64, of Dr. Eric Danvers Macnamara, the well-known psychiatrist. He had had a busy life. After taking the ordinary qualification of the English Royal Colleges in 1897, he became a surgeon in the Royal Navy for five years or more. During his term of service he was almost exclusively attached to the China Squadron, and served in the Pekin relief force, for which he obtained a medal and clasp. But surgical life in the Navy was so distasteful to him that he resigned rather than remain another couple of years to qualify for a pension. He then graduated at Cambridge, taking the M.B., B.Ch. in 1903 and the doctorate in 1908. It was then that he switched over to medicine, and became particularly interested in mental diseases, the clinical aspects of which he first studied as house-physician to Bethlem Royal Hospital. With the same object in view he became house-physician to the National Hospital in Queen Square, neurology and psychiatry being supposed, in those days, to be more intimately related than they are to-day. He was appointed assistant physician to Westminster Hospital, his Alma Mater, where he subsequently became dean of the medical school, and he had many other appointments to keep him busy. He was on the staff of the West End Hospital for Nervous Diseases and the Paddington Green Hospital for Sick Children. He was lecturer on mental diseases to Charing Cross Hospital, and gave post-graduate lectures regularly at Bethlem Royal Hospital. At one time he was examiner in psychology to the Conjoint Board of the Royal Colleges of Physicians and Surgeons. During the war he served in the R.A.M.C. and also in the Medical Department of the Admiralty. His contributions to medical literature appear to have been almost limited to articles in various encyclopaedias of medicine: Latham and English's *System of Treatment*, *The Practitioner's Encyclopaedia*, the *Dictionary of Practical Medicine*, and Price's *Textbook of Medicine*.

Macnamara was a cheery companion, but had a very retiring nature. He devoted his life to mental disease, and was unusually devoid of such hobbies as would have brought him into more intimate contact with his fellows. Even his domestic life had many associations with his special study. He married Frances Mary, daughter of Dr. W. Simpson Craig, who was proprietor and superintendent of Bishopstone House, a successful private mental home in Bedford, and sister of Sir Maurice Craig, with whom Macnamara collaborated in several of the above-mentioned articles. He leaves two sons.

Surgeon Commander G. ERNEST MACLEOD, R.N. (ret.), writes: The medical profession has sustained a great loss by the recent untimely death, after a short illness, of Eric Danvers Macnamara. A man of attractive presence and exceptionally charming personality, his quiet, unassuming manner concealed the outstanding ability and wide

sympathies which he possessed and devoted in such full measure to that department of medicine which he had made his own. To an extensive knowledge of men and matters he added a keen sense of humour, an enjoyment of life, and an optimistic outlook on affairs generally, which made him a most delightful companion. On his academic and professional attainments it would be superfluous to dwell, but I think it is no exaggeration to say that his name and work will long be remembered with affection and gratitude by patients, students, and colleagues alike. My friendship with him began many years ago, when we entered the medical department of the Navy together, and has continued ever since, and it is less than three weeks since I last had one of his usual cheery letters, in reply to one of mine, in which he asked me to hurry up and come to town again soon for one of our periodical dinner-and-theatre meetings which were always such a great pleasure, and to which I was looking forward. It is painfully sad to think that we shall not meet again.

C. C. ELLIOTT, M.D.ONT., F.R.C.S.ED.

Dr. Charles Coyne Elliott, who died on August 10th, had had a varied and interesting career before settling in general practice in Leicester. Born and educated in London, Ontario, his intellectual gifts manifested themselves very early. In fact, his contemporaries in the Medical School remember him as "the man who made one mistake," for he was said to have only once answered a question incorrectly. He took his M.D. degree in 1900, at the same time winning a gold medal, which had not been awarded for so many years that the possibility of securing it had almost been forgotten. After a few years' practice in Canada, Elliott went to China as a medical missionary, and found great scope for his scientific attainments in the treatment of patients in the extreme Western Province of Szechuan. Before his day it had not been recognized that the many severe cases of anaemia were due to ankylostomiasis, and he was the first to understand that the terrible abdominal pain "which ceases at cock-crow" was due to duodenal ulcer. He contributed to the *China Medical Journal*, September, 1918, a study of forty cases of duodenal and gastric ulcer submitted to operation. Dr. Elliott was very successful in training male medical students and nurses, and the hospital which he built was a model of economy, efficiency, and thoroughly scientific method. As time went on it became clear to him that medical students needed more than the spare time of a busy doctor, and he decided to throw in his lot with the medical school in Chengtu, where he taught clinical surgery. He was very successful in gaining the respect and affection of the Chinese medical students (not, at that time, a very amenable class of men), and many of those whom he taught are now doing most excellent work.

He used some of his time on furlough to obtain the F.R.C.S. at Edinburgh (1913), and on his last return from China spent time in study at University College Hospital and in Paris with a view to maintaining the high standard of the West China Union University in Chengtu. It was only the pressure of domestic affairs which forced him to abandon his intention of returning to China.

Dr. JOHN TERTIUS CLARKE died at his home in Harrow on August 31st at the age of 69. Born at Hinckley, Leicestershire, in 1865, Clarke was educated at Dulwich College and St. Thomas's Hospital, and qualified M.R.C.S., L.R.C.P. in 1889. In 1891 he became house-surgeon to the Royal Hants County Hospital, Winchester, where he met his future wife, Miss Mary F. Cosgrove. He served as ship surgeon for two years, and in 1896 he joined the Perak Medical Service. In 1906 he took the D.P.H. Cantab. and became medical officer in the public health department, Federated Malay States, in 1911. In 1920 he retired from the service, but remained in Malaya till 1926, carrying on an extensive practice on various rubber estates, the work consisting chiefly of the prevention of malaria and ankylostomiasis. In 1926 his heart began to trouble him seriously, and he came home to England via Canada. On his way home he was taken very seriously ill in British Columbia, but recovered, and through his indomitable pluck was able to lead a life of useful though restricted activity for another eight years. Clarke was impressed by the rarity of rheumatic fever in the Tropics, and during his eight years at Harrow he worked at the Ross Institute at Putney, carrying out researches into the causes of rheumatic fever. He wrote several articles in the *British Medical Journal* in support of his theory that rheumatic fever is transmitted by sewer rats. He was also much interested in the research work on cancer of the late Dr. Shaw Mackenzie, and gave him great help and encouragement in his labours. Tertius Clarke was keen on the work of the British Medical Association, and was a constant attendant at meetings of the Harrow Division while his health permitted; he served as honorary secretary in 1929–30. The Malaya Branch elected him a complimentary member. He broke his thigh at the age of 15 and could never afterwards move quickly enough to excel at active games, but he was a keen golfer and no mean performer. His courage and keen sense of humour in the face of grave physical disability endeared him to all who met him, and their sympathy will go out in abundant measure to his widow and two sons.

The death took place suddenly at Buxton, on August 30th, of Dr. DAVID DUNCAN MAIN, who for many years was one of the best-known missionaries in China. Dr. Main was born at Kirkmichael in 1856, and after studying medicine in Glasgow and Edinburgh took the triple qualification of the Scottish Corporations in 1881. He immediately began work as a medical missionary in China, and from 1881 to 1927 was superintendent of the Church Missionary Society Medical Mission at Hangchow, and principal of the Hangchow Medical Training College. Here he was in charge of a large hospital, and was the head of a native medical school where many hundred Chinese men and women were trained for medical work. He organized a centre for training in industrial work, at which the mission provided practical instruction for masons, carpenters, tinsmiths, painters, etc., and inaugurated sanatoria for convalescents and tuberculous patients, and a leper hospital. During intervals of return to his native country Dr. Main took the Membership of the Royal College of Physicians at Edinburgh in 1901, proceeding to the Fellowship in 1905; in 1911 he joined the Royal College of Surgeons of Edinburgh as a Fellow. In addition to his active practical work he rendered valuable service to Chinese medicine by translating several medical works into Chinese, including Whitla's *Dictionary of Treatment*, Caird and Cathcart's *Surgical Handbook*, and Playfair's *Midwifery*. For his services to China he received various high decorations from the Republic; he was also decorated as a Fifth Class Mandarin by the Emperor of China in 1901. In 1927, after forty-five years of continuous work in China, he settled in Edinburgh, where he took considerable interest in the medical life of the city. The interment took place in the Dean Cemetery, Edinburgh, on September 4th.

We regret to announce the death of Dr. ANNIE T. LEIGH, the wife of Mr. J. R. Johnson of School Road, Sale, Cheshire. Dr. Leigh qualified M.B., Ch.B. in 1925 at Manchester, and took the diplomas of M.R.C.S. and L.R.C.P. in 1926. She devoted the whole of her time to anaesthetics, and before qualifying she began research work with the late Dr. S. R. Wilson, and continued with him in this work till his tragic death. Her first appointment was as visiting anaesthetist to the Manchester Royal Infirmary (Central Branch). After the

death of Dr. S. R. Wilson she was appointed to his post of honorary anaesthetist to the Manchester Dental Hospital, and was a member of the Board. At the time of her death Dr. Leigh was also honorary anaesthetist to St. Mary's Hospital, Whitworth Street, visiting anaesthetist to St. Mary's, High Street, and to the Northern Hospital for Women and Children. She had only recently been appointed by the Manchester Corporation as visiting anaesthetist to Booth Hall Infirmary. Dr. Leigh was also a medical examiner for the Sun Life of Canada Assurance Co., Ltd. She was the sister of Dr. Gertrude B. Leigh of Sunderland. Her death came as a great shock to her medical friends.

We regret to record the death of Dr. EDWARD BUXTON at Jersey on August 25th. Dr. Buxton qualified L.R.C.P.Ed. and M.R.C.S. in 1885, and took the diploma of M.R.C.P.Ed. in 1893 and F.R.C.S.Ed. in 1894, and the D.P.H. in 1892. In 1897 he received the degree of M.D.St.And. Dr. Buxton was an honorary life member of the St. John Ambulance Association, and had been a member of the British Medical Association for forty-eight years. At one time he was physician to the Nazareth House Orphanage, Great Crosby, and medical officer of health for the Little Crosby Urban District Council. He had retired from practice for some years. Dr. Buxton was of a genial disposition and had many friends. He leaves a widow, one son, and one daughter.

The death is announced, on August 10th, of Dr. RUDOLF BOLLING TEUSLER of St. Luke's International Hospital, Tokyo, who was one of the leading figures in the foreign community in Japan. Dr. Teusler, who was a cousin of Mrs. Woodrow Wilson, was born at Rome, Georgia, in 1876. He died at St. Luke's, the hospital and public health institution which he founded as a small eight-roomed mission hospital when he went to Japan for the American Episcopal Church in 1900. After graduating M.D. at the Medical College of Virginia he was in private practice and on the teaching staff of his college. His little hospital grew to a great institution, the training school for nurses being approved by the Japanese Government as the college for nurses. To Dr. Teusler more than to anyone else was due the raising of the status of the nursing profession in Japan, while he was also a pioneer with regard to children's clinics and the provision of visiting nurses in poor districts. In the earthquake of 1923 his hospital was destroyed, but the foundations for a new building, which had just been completed, remained intact, and the site became a refugee centre where medical aid of all sorts was given. The present buildings were opened and dedicated last year. In all his work Dr. Teusler was aided by a fine band of Japanese colleagues, who at the present time include leading specialists in almost every branch of medicine and surgery. It is illustrative of the regard for him that he was referred to by friends as "Sir Galahad." Teusler was decorated with the Fifth Class Order of the Rising Sun, the Russian Order of St. Vladimir, and the Czechoslovak war medal, which were awarded him for his work with the American Red Cross in Siberia from 1918 to 1921, and for the evacuation of Czech invalid prisoners from Siberia.

The following well-known foreign medical practitioners have recently died: Dr. EUGENIO TANZI, professor of psychiatry and neurology at Florence, aged 78; Professor E. JOSEPH, a Berlin urologist; Dr. GASCARD, professor at the Rouen medical school and national correspondent of the Académie de Médecine in the Section of Surgery; Dr. LOUSTE, general secretary of the Société Française de Dermatologie; Hofrat Professor Dr. HERMANN SCHLESINGER, head of the third medical department of the General Hospital at Vienna, aged 68; Dr. C. C. DELPRAT, a former editor of *Nederlansch Tijdschrift voor Geneeskunde*, aged 79; and Dr. ERNEST SCOTT, professor of pathology, Ohio State University College of Medicine, since 1915, aged 58.

Medical News

The annual prize distribution at St. George's Hospital Medical School will be held in the Board Room of the hospital on Monday, October 1st, at 3 p.m., when Professor W. Langdon Brown will deliver the inaugural address.

The Central London Throat, Nose, and Ear Hospital (Gray's Inn Road, W.C.) has arranged an intensive course in laryngology, rhinology, and otology from October 1st to 27th. The course includes an anatomy and physiology class, an operative surgery class, a practical course in peroral endoscopy, and a course in pathology and bacteriology (specially suitable for D.L.O. students). The fee for the whole course is £21, but classes may be taken separately. Full particulars may be obtained from the secretary-superintendent.

On Tuesday, September 18th, a play called "Muggleston on the Map," by A. V. Williams and Ernest Milligan, will be broadcast from the North Regional radio station (Manchester) in the night programme. This play is a municipal comedy, with a special appeal also to football "fans." Dr. Milligan is M.O.H. for the borough of Glossop, and "The Ballad Singer," an Ulster comedy written by him, was broadcast in 1933 from Belfast.

The jubilee meeting of the Medical Officers of Schools Association will be held at Eastbourne on Friday and Saturday, September 14th and 15th, by invitation of the mayor and council of the county borough of Eastbourne. There will be a paper by Dr. J. Alison Glover and Dr. Fred Griffith on "Acute Streptococcal Throat Infections," on September 15th, at 10 a.m., at the Town Hall, Grove Road, Eastbourne.

A lecture on the theory and practice of contraception will be given to medical students who have completed their gynaecological course and practitioners by Dr. Gladys Cox on Friday, September 14th, at 6 p.m., at the Walworth Women's Welfare Centre, 153A, East Street, S.E.17. Practical demonstrations will be given on each subsequent Friday till September 28th (inclusive). Tickets admitting to the lecture (5s.) are to be applied for in advance.

Instruction to post-graduates and medical students in the theory and practice of contraception will be given at the North Kensington Women's Welfare Centre (12, Telford Road, Ladbroke Grove, W.10) during the next three months. Particulars may be had from the secretary.

The Fellowship of Medicine and Post-Graduate Medical Association announces further lecture-demonstrations at 11, Chandos Street, W., at 2.30 p.m., on September 11th (chronic cough), and September 18th (hemiplegia). There will be a "refresher" course in medicine, surgery, and the specialties at the Westminster Hospital, from September 17th to 29th. Other forthcoming courses include diseases of the chest at the Brompton Hospital, September 24th to 29th, and, during the same period, proctology at the Gordon Hospital; diseases of children at the Queen's Hospital, October 1st to 13th; dermatology at St. John's Hospital, October 1st to 27th; physical medicine (evening course) at the St. John Clinic and Institute of Physical Medicine, October 1st to 27th; cardiology at the National Heart Hospital, October 8th to 20th; medicine, surgery, and the specialties at the Metropolitan Hospital, October 8th to 21st.

A conference of some of the leading paediatricians of the world will be held at Lyons on September 27th and 28th. The conference, which will deal specially with the prevention of malaria, rickets, and convulsions, has been organized by the International Association for Preventive Paediatrics, which is the medical section of the Save the Children International Union. The British representative on its council is Dr. Leonard Findlay.

The twelfth Rumanian Congress for oto-rhino-laryngology will be held at Bucarest from September 28th to 30th. Discussions have been arranged on thrombosis of the lateral sinus and balneotherapy in oto-rhino-laryngology.

According to a correspondent writing in the *Times* of ptember 5th Dr. W. von Brehmer, head of the atomical laboratory of the Reich Biological Institute Dahlem, believes that he has proved cancer to be a cterial disease, having discovered, isolated, and trans-nted a visible organism, to which he gives the name *Siphonospora polymorphia*. This bacterium exists in se contact with the erythrocytes in cancerous subjects, d its discovery is associated with the observation that disease occurs only in cases where the blood shows a ong alkaline content. Tumours have been produced in oculated animals, and seven stages in the development the organism are described.

The National Smoke Abatement Society announces that sixth annual conference will be held at Glasgow, in njunction with the Scottish Branch, on September 27th, th, and 29th. Papers will be read by Professor J. R. rrie, Dr. J. S. Owens, Messrs. W. J. Grassic, O. chran, W. D. Besant, and Dr. J. J. Jervis. The con-ence headquarters will be the North British Station otel, George Square; further information may be ob-ned from the secretary, National Smoke Abatement ciety, 36, King Street, Manchester.

The fifteenth congress of the Italian Paediatric Society ll be held at Sienna from September 19th to 22nd, ien the following subjects will be discussed: the tonomic nervous system in childhood, introduced by s. G. Careddu and B. Trambusti; septicaemia in new-rn infants, introduced by Drs. A. Bocchini, M. Gerbasi, d. R. Vaglio; and indications for climatotherapy in ildhood, introduced by Drs. G. C. Bentivoglio, A. Foa, d L. Maghi.

The Societas Oto-rhino-laryngologica Latina will hold fourth congress at Brussels from September 20th to th, under the presidency of Dr. Buys. Further informa-on can be obtained from the secretary, Dr. Vues, Rue de vourne 9, Brussels.

The annual congress of the Chartered Society of assage and Medical Gymnastics will be held from Sep-mber 24th to 28th, and all lectures and demonstrations ll be given at Bedford College for Women, Regent's ark, N.W. Registered medical practitioners will be ad-itted free of charge to the lectures and demonstrations, r which a card of admission may be obtained from the fices of the society, Tavistock House (North), Tavistock quare, W.C. The annual dinner of the society will be ld at the Café Royal, Regent Street, W., on Wednesday, ptember 26th, at 7.30 p.m. On Friday, September th, at 8.30 p.m., the Founders' Lecture will be delivered Sir Humphry Rolleston, on "Occupational Diseases Those in Attendance on the Sick."

The National Children's Home and Orphanage, whose ead office is at Highbury Park, London, N.5, has issued vitations to the opening of the new wing at the sana-rium, Harpenden, on Saturday, September 22nd, at 45 p.m., by Dame Janet Campbell. The chair will be ken by Sir Thomas Barlow.

The address of the British Empire Leprosy Relief ssociation has been changed to 131, Baker Street, W.1 elephone, Welbeck 5913).

We are asked to announce that the new edition of the *elfast Hospitals' Pharmacopoeia*, revised and brought to date with the collaboration of the medical profession id issued by the Ulster Retail Drug Trade Association, me into official use on September 1st. Copies are btainable from the principal Belfast booksellers and olesale drug establishments.

An epidemic of acute poliomyelitis, threatening to reach rge proportions, is reported from Denmark, where cases ave been notified in Faaborg, Odense, and elsewhere. reventive measures have been adopted; and the Lister nstitute, London, on a telegraphic request from Professor adsen of Copenhagen, recently dispatched 800 ampoules its anti-serum (horse). Given intramuscularly in 5 c.cm. oses this is believed to offer the best prophylaxis, giving assive immunity for about three weeks. Statistics illus-rating its effect in the present epidemic will be awaited ith interest.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBER** of the British Medical Association and the *British Medical Journal* is EUSTON 2111 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

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The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Earth Burials and Disease

Dr. CHRISTOPHER ROLLESTON (Stamford) writes: I should be glad to know if there is any modern evidence that earth burials cause disease. On looking through the literature on the subject all the evidence seems to go back to the pre-bacteriological era. I should be glad to know whether any epidemics have been traced to this cause in recent years. I have Thompson's book on *Cremation*, but that, of course, is an ancient book.

Over-smoking

"E. T.-P." (Orpington), in reply to "F. C. R." (Sussex), writes: I found (when I was in general practice) invariable success with the following plan. Ascertain as exactly as possible how many cigarettes per day the patient smokes; if this number was fifty direct him to fill his box or case first thing in the morning with forty-nine, carry that around with him, and make it do for that day. Repeat this process for perhaps two days, and on the third put only forty-eight in the case. As time goes on and the number per day decreases, the interval between the "decreases" must be *increased*. A smoker will not really notice the loss of one cigarette in one day when the difference is between fifty and forty-nine, but when he has dropped from forty-nine to forty-five he should keep at the forty-five for several days before dropping to forty-four, and so on. I would emphasize the importance of *exact* instruction as to the number of cigarettes and the number of days' interval, and of the personal interest of the doctor in asking for the patient's report as to how conscientiously the directions have been carried out. This method takes time; in fact, it must be allowed to take so much time that the patient does not know he has been deprived of one cigarette every so many days.

Removal of Tattoo Marks

Dr. E. BAYLIS ASH (Birmingham) writes in reply to Dr. George Steane's inquiry: Three methods are available: (1) excision of the mark and skin grafting gives a moderately good result in small tattoo marks up to two inches square; (2) freezing with CO_2 snow in fairly new tattoo marks results in a scarred area hardly discernible after a year; (3) old tattoo marks, particularly those containing red and yellow pigments, are best removed with a fine spark of the diathermy needle. Numerous treatments are necessary, and the scar is rather more pitted than that from the CO_2, but quite good when examined after two years. The treatment is tedious, and requires a good deal of patience on the part of the medical man and the patient.

Income Tax

Expenses of Assistant

"J. K." was an assistant to August, 1932, using two rooms of his house for seeing patients; his maid had to answer the door and telephone. Since August, 1932, he has held another assistantship, his principal making it a condition that he rents the flat over the surgery and keeps a competent maid to answer telephone calls and take messages for the practice. He puts his car expenses at £150 a year, including depreciation, but excluding running costs during holidays.

*** The expenses of the maid's services are partly private and the amount deductible professionally is a fair proportion having regard, *inter alia*, to the time expended by her on the two classes of work. Probably one-third would not be unfair to "J. K." as a professional charge. As regards the rent the same proportion might be claimed in the first case, but in his present circumstances apparently no part of the flat is used for the reception of patients and no part of the rent will be allowed. Apparently practically the whole of the £150 car expenses will be allowable, but "J. K." will have to show the amount of depreciation claimed as a separate item, and some slight restriction of that claim may be due in respect of holiday use of the car.

LETTERS, NOTES, ETC.

English Children in the Alps

The Queen Alexandra Sanatorium Fund, which owes its origin to the appeal for an English sanatorium in Davos made by the late Lord Balfour of Burleigh thirty years ago, has investments valued at £64,000 and an annual income of about £2,400. Since the sanatorium was given up as a war-time necessity the income has been used to enable patients of small means suffering from curable tuberculosis to stay long enough in Davos to make a substantial recovery. Last year the number of suitable cases applying was not very large, and it was possible to extend the grants for more than the usual five or six months on medical advice in Davos; but the council of the fund in London recognizes that a limited stay in the Alps, particularly if it must be followed by a return to straitened conditions at home, does not produce the best possible return for expenditure. For the last two years the council has had an object-lesson of a different kind in the Davos Valley. By the generosity of the president of the Birmingham Children's Hospital, acting in concert with its staff, a group of forty or more Birmingham children have spent several months in the Alps, with results which have been critically watched by a number of British and foreign paediatricians. About one-half of these children had had various forms of surgical tuberculosis; the remainder illnesses such as asthma, interstitial pneumonia, recurrent bronchitis, debility, and malnutrition after prolonged ill-health. When last reported, of the eighty children who had been to Switzerland forty-one were discharged "cured": after a stay averaging seven months, and at a weekly cost per patient of £2 2s. 6d. The experiment having surpassed the expectations of its promoters, the council of the Queen Alexandra Fund, a year ago, adopted the principle of helping children. At that time negotiations for collaboration with the Birmingham scheme did not mature and the money was allowed to accumulate, so that for the coming year there is a larger balance, and the council has agreed to allot, if suitable cases offer, as much as half its available income for the purpose. No hard-and-fast rules have yet been laid down as to the qualifications for a child candidate. The fund's honorary examining physicians in London will decide on its merits any application received for help from the fund, which now has the benefit of the advice of Professor L. G. Parsons, who was elected a member of council at the recent meeting. Practitioners with youthful patients who would, they think, benefit under the scheme may obtain further information from the honorary secretary of the council, Mr. A. Stanley Herbert, 25, Birchin Lane, E.C.3, or from the local secretary, Mr. W. G. Lockett, Davos-platz, Switzerland.

Conan Doyle, Bell, and Laycock

Dr. T. JOHNSTONE (Ilkley) writes: We have heard much of Sir A. Conan Doyle and Mr. Joseph Bell, but nothing from either as to who was Joe Bell's teacher. He was Professor Laycock, the first Englishman appointed to a medical chair in the University of Edinburgh, and who, all his life, was simply persecuted by some of his colleagues, both privately and in public. Their behaviour is recorded in a book or collection by the late Dr Stark Currie, and was presented by me to the library Morningside Mental Hospital, then under the care o Professor Robertson, who intended, had he lived, to produce a lecture on, or short biography of, Laycock. He was a remarkable man, a teacher at the old York medical school, where his pupils included Sir Jonathan Hutchinson and Hughlings Jackson, and he was friendly to Sir Clifford Allbutt. In Edinburgh he inspired, and had his full share in teaching, such men as Sir David Ferrier, Sir Dyce Duckworth, and Sir Lauder Brunton. Laycock was a pioneer in psychology and mental ailments, and did much to simplify the lunacy laws. He taught that people could carry the "poison" of diphtheria and give it to others, though they themselves escaped. He drew our attention to the effects of poisons on the nervous system after the exanthemata or injuries, and, instead of shell-shock, we were taught of "cannon fever" as the cause of nervous troubles after a war. Some of his teachings were wonderful, and time has verified many. He used to teach us physiognomical diagnosis and many other things, by observation and inference. I wonder what he thought of Joe Bell? Time, education, and evolution have widened the outlook of the men who select the medical professors at my old university, and I will merely mention my old teachers, Sir William Turner and Lord Lister.

"Praise and Dispraise of Doctors"

Dr. J. N. DUGDALE (Johore Bahru, Malaya) writes: I was interested to read (*Journal*, June 30th, p. 1172) the quotation of the Latin epigram attributed to Euricius Cordus in Dr. Hutchison's illuminating MacAlister Lecture. It reads: "Three faces the physician hath . . . first as an angel . . next . . . a god . . . and last of all . . . a very fiend of hell." Some time ago a Chinese patient described to me a cartoon in a Chinese paper in which the physician is depicted as an angel on arrival at the sick-bed, a god on recovery of the patient, but as a demon when he sent in the bill! Many Chinese maxims are similar to our own, and it would be interesting to know if they had a common origin.

Transport of Invalids by Railway

Dr. MAURICE CAMPBELL (London, W.1) writes: In these days, when motors are almost universal, I am not sure if doctors realize how easily patients can travel by train. Recently a friend of mine had to come from Manchester to London, and I was surprised at the comfort, or even luxury, of the invalid coach. He was, indeed, more shaken in a ten-mile motor ambulance journey than on the rest of the way. He had the additional advantages of meals and of seeing the country after many weeks in bed, and greatly enjoyed the day. Patients may be deterred by the thought of the cost, but this was most reasonable. I am sure no one who has experience of this will ever be willing to travel any other way.

Autoclaving of Gum-elastic Catheters

Dr. MALCOLM BAILLIE (Urological Department, King's College Hospital, S.E.5) writes: We have found that the brown gum-elastic Eynard urethral catheters will stand indefinitely repeated autoclaving, and when cool have lost none of their stiffness. This method of sterilization recommends itself by its saving of labour and killing of all organisms, including spores.

Surgical Films at the Annual Meeting

Acknowledgement

In the Section of Surgery at the Annual Meeting of the British Medical Association at Bournemouth cinematographic films were lent by Sir John Thomson-Walker, Mr. Tudor Edwards, and Professor G. Grey Turner, dealing respectively with prostatectomy, lobectomy, and construction of an extrathoracic oesophagus after oesophagectomy. These were highly appreciated on the several occasions on which they were shown.

The Medical Supply Association, Ltd. (167–73, Gray's Inn Road, W.C.1), inform us that they are opening new showrooms at 95, Wimpole Street, W.1 (opposite the Royal Society of Medicine).

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 35, 36, 37, 38, 39, 42, and 43 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 40 and 41.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *164*.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

153 Glycerin Therapy in Renal and Ureteral Calculus

LICKINT (*Münch. med. Woch.*, June 1st, 1934, p. 821), ho states that stones in the kidney and ureter are on e increase with each decade, enumerates some of the ethods of conservative treatment: (1) masterly in- tivity, with or without anti-spasmodics (undoubtedly uite a percentage of stones are passed spontaneously);) ureteral massage; (3) lavage of the ureters by large lantities of tea, coffee, and mineral waters; (4) stretch- g of the ureters with special instruments, or with two to ree ureteral catheters; and (5) administration of tuitary extract, which increases ureteral peristalsis. He ien describes treatment by glycerin as an important nservative measure. Large doses of this substance, are ccreted in large quantities in the urine. Its therapeutic alue in the treatment of calculi of the urinary system stated to be that: (1) it relieves spasm and lessens pain;) it increases ureteral peristalsis due to its dehydrating tion. Lickint denies the diuretic action of glycerin, iat it acts by increasing the viscosity of the urine, that has any function as a bland fluid, and that it dissolves ones. It is useless given in small doses, and the author dministers 50 grams of pure glycerin thrice daily for iree days. He states that he has never observed bad ffects from this treatment, and vomiting and diarrhoea o not occur. The treatment is contraindicated when ie stone is too large to pass down the ureter, and in nflammatory conditions of the kidney. He has used lycerin in twenty cases of urinary calculi. In four cases e gave inadequate doses with resulting failure. In six- een cases, with large doses of glycerin, he recorded one omplete failure; one case passed one stone, but a econd one failed to pass into the bladder; in the re- naining twelve the stones were passed.

154 Symptomatology and Early Diagnosis of Cancer of the Colon

. CRAFOORD (*Acta Chir. Scand.*, May 19th, 1934, p. 513) eplores the frequency with which cancer of the colon is verlooked until it is inoperable, and analyses the first ymptoms of 160 patients treated in a Danish hospital n the period 1900–30. In as many as thirty of these ases the disease was too advanced to warrant a radical peration. In 101 cases there were vague and general bdominal symptoms which in eighty-three cases were he first to appear. The average interval between the rst appearance of these general symptoms and treatment as seven months. In most cases the patients them- elves were to blame for this delay, but in several in- tances they had been for some time under the care of eneral practitioners and even under observation in hos- ital without the cancer of the colon being recognized ntil it had reached an advanced stage. An apology for his state of affairs may be forthcoming in the not in- equent symptomless development of the disease whose rst manifestation may be acute intestinal obstruction aused by an inoperable new growth. The author classi- es, in seven groups the manifestations which first indi- ated the existence of the disease: (1) general abdominal ymptoms in eighty-three, (2) intermittent intestinal bstruction in twenty, (3) acute intestinal obstruction in xteen, (4) emaciation and debility in thirteen, (5) blood nd mucus in the motions in six, (6) constipation in six- een, and (7) diarrhoea in six cases. It should be noted hat these figures refer exclusively to the cases in which ach sign or symptom was the earliest evidence of the isease. Much could be done to increase the proportion f operable cases if prompt attention were paid to the bove signs and symptoms and the patient submitted to n *x*-ray examination, which, in the author's opinion, is he "sovereign means" for deciding for or against the iagnosis of cancer of the colon.

155 Ultra-violet Light as a Preventive of Tuberculosis

E. BRUNTHALER (*Deut. med. Woch.*, June 8th, 1934, p. 863) has treated with ultra-violet light in two periods children exposed to tuberculosis or already infected with it. In the first period, 1924–8, he treated in this manner 248 children (up to the age of 15) out of 426 who were exposed to infection. Among the 178 children who, not being given this prophylactic treatment, served as controls, there were as many as eighteen who developed active tuber- culosis. Among the 248 given artificial-light baths there was only one child who developed active tuberculosis, which took the form of hilum tuberculosis and ran a mild course, being arrested in a couple of months. The second period, representing another five years, from 1929 onwards, concerns 492 tuberculous children and 313 who were in contact with active cases of pulmonary tuber- culosis. Of these 313 contacts, 277 were given prophy- lactic light baths. At the end of 1933 only one of these children had developed tuberculosis, the disease involving the hilum and running a benign course. Hence the author's conclusion that artificial high-altitude sunlight is a potent preventive of tuberculosis in children exposed to it. He does not give details as to the number and duration of his light baths.

Surgery

156 Prognosis in Skull Fracture

O. SANDERS OLESON (*Ugeskrift for Laeger*, May 17th, 1934, p. 528) has conducted follow-up investigations which show that the ultimate prognosis for fractures of the skull is often excellent. In the five-year period 1926–30 forty-nine cases of fracture of the skull were treated at his hospital. In twenty-five cases the diagnosis depended on the radiograph. In thirteen cases the fracture involved the base of the skull and was uncomplicated. There were twenty-one children to twenty-two men and six women. The cause of the fracture was a traffic accident in twenty-two cases, a fall from a height in nineteen, the kick of a horse in six, and other blows in two cases. All the eight deaths occurred within a few hours of the accident. The average stay in hospital of the forty-one survivors was sixteen days. Inquiries were answered by forty of the forty-one. Fourteen of the twenty surviving children were reported as perfectly well; three were still subject to slight headache, nervousness, and lassitude; two still suffered from severe headache, giddiness, and mental dullness; and only one had developed typical Jacksonian epilepsy. Of the twenty adults, ten reported as being quite symptom-free, five had still slight symp- toms, and five serious symptoms, which did not, however, in any case entail complete incapacity for work.

157 Errors in Surgical Diagnosis

As the result of a study of the records of the first surgical division of the Roosevelt Hospital for three years, C. W. CUTLER, jun. (*Amer. Journ. Med. Sci.*, June, 1934, p. 810) found that the preoperative diagnosis was wrong in 110 out of 2,340 cases, a percentage of 4·6. Acute appendicitis headed the list with twenty-eight errors in 389 cases (7 per cent. of the whole). Five times acute salpingitis or salpingo-oophoritis was mistaken for this condition, while in five other cases infection of the ap- pendix proved to be chronic and not acute. Three of these latter cases had obstruction, and the diagnostic significance of colicky pains is thus indicated. Four other cases proved to be enteritis, the rather early and signifi- cant onset of diarrhoea having been overlooked, some- times in consequence of the administration of a laxative. Pneumonia was only once mistaken for appendicitis, error being obviated often by a preliminary radiography. In three cases pelvic disease was found. Chronic ap-

pendicitis was diagnosed 213 times, with five errors, three of these lying in the field of pelvic diagnosis. Attention is drawn to the use of lipiodol in pelvic examinations, and also the careful investigation of the biliary system in doubtful cases. In 292 hernia diagnoses there were five mistakes, errors of observation involving adenitis, varicocoele, hydrocoele, and a psoas abscess being the worst. In nine operations for cholecystitis there was one mistake, a high acutely inflamed appendix closely simulating the clinical picture of a fulminating and possibly gangrenous cholecystitis. There were thirteen errors in 191 operations for chronic cholecystitis, and the importance of not relying on any single diagnostic method in these cases is urged. In eight out of sixty-four cases regarded as duodenal ulcer this condition was not found, the final diagnosis being chronic appendicitis in seven and neurasthenia in one. The author attributes the diminishing number of mistakes in this group to the more prevalent employment of medical treatment and to more careful radiography. The diagnosis of perforated duodenal ulcer was made nineteen times, falsely in six cases. Three of these proved to be acute cholecystitis with cholelithiasis, one a volvulus of the intestine with resulting gangrene, one a perforation of a carcinoma of the sigmoid, and one an angina or coronary occlusion.

158 Treatment of Suppurative Arthritis of the Knee

J. DE FOURMESTRAUX (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 2nd, 1934, p. 757) states that simple arthrotomy suffices when the effusion is confined to the anterior portion of the knee without deep fistulae or condyloid perforations. This should be followed by active (in preference to passive) mobilization of the joint according to Willems's method. The pain caused by these movements, and those consequently rendered possible, can be obviated by local anaesthesia of the knee. Active movements cause expression of the effusion, and act as an efficient means of drainage. The anaesthesia should be extensive so as to act on the terminal branches of the external and internal popliteal nerves and the sympathetic; cocaine injections (0.5 per cent. solution) should therefore be made into the external lateral ligament, with infiltration of the crural biceps and diffusion under the fascia lata; and into the internal lateral ligament with diffusion under the rectus, sartorius, and semitendinosus. Movements can be made many times daily; they usually again become painful after forty-eight hours, when the treatment is renewed till the joint is completely free of fluid and dry. Three cases are recorded to demonstrate the efficacy of this method. Despite Picot's war experience that amputation is necessary in cases of streptococcic infection of the knee, de Fourmestraux maintains that his treatment should be employed whatever might be the infecting micro-organism. The prognosis is much graver in arthritis diffused to the posterior of the knee, and especially in cases of suppurative osteo-arthritis.

Therapeutics

159 Hot and Cold Compresses

A. BRAUCHLE (*Med. Welt*, May 26th, 1934, p. 729) discusses the indications of application of hot fomentations and cold compresses. In those cases in which one is in doubt, a hot fomentation should first be applied, which can then be changed if necessary, and followed by a cold compress left on for one to two hours. Hot fomentations relieve pain and cramp, loosen sticky secretions, and soften the part. They are indicated in local rheumatic pain; in migraine, applied to the back of the neck or site of greatest pain; in catarrhal conditions of the teeth, tonsils, glands, and ears. They are helpful in catarrhal processes of the upper respiratory tract and bronchi; in asthma and emphysema; in pleurisy and pneumonia, to lessen pain and loosen secretions. In angina pectoris moderate pain is lessened by them; acute attacks may be accentuated by them. Pain and cramp are lessened in all forms of spasm of unstriped muscle. Cold compresses are indicated in headaches of nervous origin; in haemorrhage into the brain; in toxic conditions of the thyroid; in cardiac arrhythmia; in haemorrhages into the lungs, stomach, or intestine. In the case of inflammatic which is performing no useful function—for exampl pericarditis—cold compresses are also of value. Conversely, when localized febrile reaction denotes an attempt on the part of Nature to cure the condition, hot fomentations are indicated, as they increase the circulation and remove the dead bacteria and metabolic wast products. Brauchle emphasizes the importance of relyin on the subjective physical feelings of the patient, and c changing a hot fomentation for a cold compress if th patient does not feel better or even worse after it.

160 Gas Gangrene

G. E. KONJETZNY (*Klin. Woch.*, June 9th, 1934, p. 831) describing nine cases of gas gangrene under his care i the last four years, stresses the value of prophylacti treatment—namely, careful cleansing of all parts in seriou accidents, with, when necessary, wide amputation c affected limbs. He denies that anti-gas-gangrene serur is valueless. The serum may not prevent the incidenc of gas gangrene (it did not in four of his cases), but i lessens the fatality of the disease. There was only on death in his cases, none occurring in seven which followe street accidents. In five of the seven street acciden cases amputation was avoided by the administration c anti-gas-gangrene serum, which was given in doses c 20 to 80 c.cm. subcutaneously or intravenously.

161 Bee Venom in Rheumatism

According to R. SCHWAB (*Münch. med. Woch.*, May 25th 1934, p. 793) the efficacy of cutaneous injection of be venom in rheumatic and neuralgic conditions has bee widely recognized. He finds that inunction of an oint ment containing the poison, together with salicylic aci to soften, and microscopic crystals finely to excoriate th skin, is equally effective and less painful than injectio in acute and chronic articular rheumatism, musculа rheumatism, sciatica, and neuralgias. From the fact tha remote was as successful as local inunction, it is con cluded that the venom acts by immunizing at the sam time against the apian and rheumatic poisons. Loca reactions were earlier in non-rheumatic than rheumati subjects.

Dermatology

162 Leather Dermatitis

H. BEERMAN (*Arch. Derm. and Syph.*, May, 1934, p. 67) records five cases of this rare condition, and comments o its complex aetiology. The specific factors in his case were tanned leather (probably due to some synthetic tan stuff), and in one instance the vat dye. Beerman remark that the literature on the subject contains examples o specific irritations resulting from almost every substanc used in leather manufacture. Fungus infections, h thinks, probably predispose to this condition by extend ing the sensitivity of the body to other agents in additio to trichophytin, while injury to the skin caused by th mycotic inflammatory process facilitates the penetratio by other irritating substances. On the other hand, a allergic dermatitis, such as that of leather, may pre dispose to, or reactivate, a fungus infection. In one o the author's cases dermatomycosis of the hands wa followed by a hatband dermatitis. Three months late severe dermatitis occurred on the parts of the feet covere by the shoes, and there was an associated interdigita fungous maceration. During the foot trouble, however there was no recrudescence of the forehead condition although a later recurrence of the leather dermatitis of th feet was complicated by a return of the dermatomycosi in the locality. It appears that focal infection ma bring out a local sensitivity, or may help to maintai

a leather dermatitis, but only temporary relief is secured by removal of the offending focus. Certain clinical peculiarities emerged in the course of observation of these cases. It was clear that persons varied in the intensity of their response to the same irritant, in the same concentration, and acting for the same length of time. Contrary to expectation it was found that all hat leather need not cause irritation in all sensitive persons, though in a very sensitive subject reactions of varying grades to all leathers might be anticipated. It was shown that the irritating substance was soluble in ether, was not present in all leathers, and was not absorbed through the intact skin, unless in sufficient concentration to excite a reaction in a very sensitive person. The author concludes that this lends support to the view that the various irritating substances do not act directly, but possibly excite the production in the skin of some common substance, which in its turn produces the dermatitis.

163 Haematoporphyrinuria and Impaired Liver Function in Hydroa Vacciniforme

E. URBACH and J. BLÖCH (*Wien. klin. Woch.*, April 27th, 1934, p. 527) describe two cases in which hydroa vacciniforme was combined with porphyrinuria, porphyrinaemia, and impaired liver function. The first patient, a chronic alcoholic aged 50, had had syphilis eight years previously, and function tests pointed to chronic pancreatitis, hepatic cirrhosis, and latent diabetes. His skin was hypersensitive to sunlight, especially the rays of longer wavelength. He responded to, but could not tolerate, raw liver treatment, was not relieved by antidiabetic or insulin-dextrose therapy, but was improved in all respects by a course of neosalvarsan and bismuth. In the second patient (a woman aged 40) the hydroa of the exposed parts preceded by six months the porphyrinuria, and a latent hepatopathy was shown by function tests; improvement in the cutaneous and urinary morbid conditions, as well as in abdominal crises, which had been accompanied by increased porphyrinuria and indicanuria, followed prolonged rest and a diet rich in milk and carbohydrates. Urbach and Blöch believe that neither isolated tests with non-dissociated sun rays nor tests with artificial luminous sources suffice to determine the sensitizing rays: only from tests with coloured glass filters can protective ointments be chosen which will, temporarily at least, cure the eruption.

164 Sodium Thiosulphate Treatment of Dermatitis Herpetiformis

In four cases E. STEINER (*Derm. Woch.*, June 2nd, 1934, p. 682) has had rapid and conspicuous success in treating dermatitis herpetiformis by ten intravenous injections (three each week) of 1 gram of sodium thiosulphate: at the same time 0.5 grain was given orally thrice daily (twice daily on the day of an injection). Externally, only a 1 per cent. menthol dusting powder was used. Sodium thiosulphate treatment of Duhring's disease was introduced by Wirz, who postulated a metabolic sulphur derangement. Steiner suggests, however, that the action of sodium thiosulphate is chemical, antagonizing tissue iodine. He points out that in dermatitis herpetiformis there is special sensitiveness to iodine, taken internally or applied externally: it gives an intense cutaneous reaction, and often leads to pyrexia and general prostration. Sodium thiosulphate reduces free iodine in solution.

165 Treatment of Scalp Ringworm with Thallium Acetate

One hundred and thirty-one children aged from 2 to 10 were depilated with thallium acetate by LOUSTE and RABUT (*Bull. Soc. Franç. de Derm. et de Syph.*, March, 1934, p. 494), four of them being treated twice. The cases dealt with were microsporon ninety-two, trichophyton twenty-nine, and favus fourteen. The dose ranged from 7 to 8.5 mg. per kilogram of body weight, and was given at a single draught. The time taken for depilation to begin was irregular, varying from four to fourteen days, the greatest number beginning on the eleventh day. In 5 per cent. of cases there was no depilation at all. Often the fall of hair was incomplete, bands being left in the frontal and occipital regions, and it was found that there was a tendency for the diseased hairs not to be loosened. Regrowth began in from eight to fifteen days, and was complete in from three to six weeks. Complications encountered were: rise of temperature on the first or second day (as high as 103° F. in one case); muscular pains in the lower limbs, varying from a feeling of heaviness to acute pain necessitating rest in bed; septic folliculitis of the scalp during the second month (20 per cent. of cases); transient albuminuria during the second week (10 per cent. of cases); and loss of appetite, jaundice, erythema of the face, dilatation of the pupils, and oedema of the eyelids. In the cases treated a second time after intervals of from four to seven months there were no complications of note. Louste and Rabut considered their results to be poor, as they had 53 per cent. failures.

Obstetrics and Gynaecology

166 Expression of Placenta: Modification of Crede's Method

W. KARNICKI (*Gynécol. et Obstét.*, May, 1934, p. 437) points out that most of the historical methods aim at expressing an already detached placenta. If it lies in the vagina Crédé's method is effective; but for the cases in which there is no retroplacental haemorrhage, and therefore no detachment, after waiting for three hours the following manœuvres are suggested. First, the fundus is palpated to find the soft and prominent portion (usually one cornu, often the right) which denotes the site of the placenta. Secondly, the centre of this area is massaged between two fingers until contractions occur whereby detachment and retroplacental haemorrhage is initiated. Thirdly, massage is done radially outwards from this starting-point until the uterine outline has become symmetrical, which indicates complete detachment. Fourthly, pressure is applied with the right hand on the area thus softened in the direction of the genital canal until the placenta is expressed. As complete detachment has been previously secured, this pressure is exerted upon clot only, so that tearing of the membranes is avoided. Further, with the left palm placed above the symphysis, the thumb and two first fingers make counterpressure on the fundus. This straightens the birth canal and also prevents inversion. The method fails with an actually adherent placenta.

167 Low Cervical Caesarean Section

W. J. STEVENS (*Canadian Med. Assoc. Journ.*, May, 1934, p. 498) argues that since the mortality rate in the intraperitoneal retrovesical Caesarean section is so much lower than that in the classical method a more universal adoption of this procedure, with a curved transverse incision and a double flap closure would seem reasonable. After infected and prolonged labours this low section is particularly indicated, since the lower uterine segment resists infection better than the fundus. The danger of peritonitis is very much lessened, and any infection is restricted to the most dependent part of the abdomen, where it is well situated for localization and evacuation. There are fewer post-operative discomforts, and there is less tendency to adhesions, since the intestines and omentum are seldom seen or handled during the operation. More protection is afforded to sutures in the passive lower segment, and they are also subjected to less strain from muscular activity. This promotes the formation of a stronger scar, and a consequent lessened liability to uterine rupture in subsequent labours. Stevens points out that the adequately long transverse semilunar incision of 15 cm. or more is restricted to the thinner, avascular, lower uterine segment, where the muscles and blood

vessels run transversely. With reasonable care in delivering the head it is possible to reduce the otherwise unavoidable trauma, and much less haemorrhage is entailed than in the classical operation. He admits, however, that the low method is somewhat more complicated, and takes rather longer to perform. He adds that it is essential to remember that Caesarean section is still to be regarded as very hazardous, and not lightly to be undertaken. There is room for improvement in its technique, as well as in the critical assessment of favourable and unfavourable indications. For example, in urgent emergencies, such as accidental haemorrhage due to acute and complete placental separation, or in bad operative risks, a classical Caesarean section, with or without hysterectomy, is best.

168 X-Ray Diagnosis of Foetal Deformity

J. GRANZOW (*Zentralbl. f. Gynäk.*, June 9th, 1934, p. 1330) specifies the grounds on which diagnosis, before labour, of foetal deformity is desirable: dystocia, as in hydrocephalus, may be foreseen; considerations of foetal survival, as in anencephaly, may be eliminated from the principles of management; and premature induction may in some cases be justifiable. Clinical signs which should lead to suspicion of foetal deformity, and therefore to radiography, are hydramnios, accompanied by failing foetal pulse, and lively foetal movements. In doubtful cases a second picture taken after rupture of the membranes may be conclusive. Abnormalities of the skull are the most susceptible of *x*-ray detection, and here lateral photography is useful. Limb deformity, especially shortening, may be simulated by false projection, the limb and the film lying in non-parallel planes. A case is mentioned in which repeated films showed one arm only; no mention was made of this to the mother, and the infant proved to be quite normal. The shadow of one arm had been masked by the maternal spine. As a radiological sign of death of the foetus, overriding of the cranial vault bones—Spalding's or the tiled-roof sign—is reliable.

Pathology

169 Excitability of Human Plain Muscle in Disease

A. LÄWEN and H. J. LAUBER (*Bruns' Beitr. z. klin. Chir.*, May 19th, 1934, p. 447) find that the neuromuscular apparatus of excised strips of non-striped human muscle retains its excitability for twenty-four hours. Stomach muscle responds to adrenaline by elongation, the response being less in muscle from the ulcerated stomach than in that from the stomach associated with duodenal ulcer; this may be taken as evidence of sympatheticotonus in the ulcer stomach. The shortening in response to electric stimulation is less in muscle from a case of gastric ulcer than from one of gastric cancer. Electrical excitability of strips of gastric muscle is diminished by novocain, bile, trypsin, or bacterial toxins. Strips of gall-bladder muscle lengthen in response to adrenaline, and after electric stimulation quickly shorten at first, then slowly returning to normal. The electric response may be diminished in preparations from the morbid gall-bladder. The responses of the normal and pathological ureter are similar to those of the gall-bladder.

170 Urinary Excretion of Citric Acid

CECILIA SCHUCK (*Journ. of Nutrition*, June 10th, 1934, p. 679) found that when 1,000 c.cm. of orange juice or grape juice were added to a basal diet there was an increased citric acid excretion in the urine. In subjects given orange juice the increase was slightly greater than in those who had received grape juice, but the ratio of the amount of citric acid excreted to the amount ingested was very much higher in the cases when grape juice was administered. With one patient the increase represented 20 per cent. more than the citric acid contained in the grape juice, indicating a metabolic source for the excreted citric acid. There was a general increase in the organic acid excretion as a whole, but only 40 to 60 per cent. of the increase was derived from the citric acid in the orange juice, and of the 35 to 40 per cent. in the grape juice cases only a very small part could have come from the grapes, most of it having a metabolic origin. It is concluded that the organic acids representing products of metabolism may be the result of the alkalizing effects of the fruit juices. The same author (ibid., p. 691) tested the effects of the ingestion of citric acid, sodium citrate, and sodium bicarbonate. She found that citric acid excretion was not dependent on the ingestion of this acid, while the total organic acids and citric acid excreted as a result of the ingestion of sodium citrate amounted to two or three times the excretion on the basal diet. Sodium bicarbonate brought about an increase in the *p*H of the urine and a decrease in titratable acidity, accompanied by a small increase in total organic acids and a considerable increase in citric acid excretion. Further evidence is thus afforded for the view that citric acid plays a part in acid-base balance regulation.

171 Determination of Blood Cholesterol

J. KEMLET (*Journ. of Lab. and Clin. Med.*, May, 1934, p. 883) has devised a rapid method of determining cholesterol in whole blood, serum, or plasma. In this technique 0.2 c.cm. of blood (whole, plasma, or serum) is deposited and allowed to dry on an ashless 7 cm. filter paper; when dry the filter paper is extracted with 10 c.cm. of chloroform for two hours. This solution is compared colorimetrically with a standard cholesterol solution by the Liebermann-Burchard reaction. An accuracy of 9 mg. per 100 c.cm. is claimed. For routine laboratory methods this should prove invaluable, as it is simple and quick, and can easily be done in duplicate if greater than clinical accuracy is required.

172 Isolation of a Polysaccharide from Br. abortus

G. FAVILLI and G. BIANCALANI (*Lo Sperimentale*, June, 1934, p. 337), record the isolation of a polysaccharide substance from the bovine type of *Br. abortus*. Previous attempts, though successful with *Br. melitensis* and *Br. paramelitensis*, had failed with *Br. abortus*, practically the whole of the polysaccharide being lost during the process of purification. By modifying this process the authors have now succeeded in getting rid of the protein without losing the polysaccharide. Their method was briefly as follows. A typical smooth strain of *Br. abortus*, isolated from the stomach of a bovine foetus, was grown for three days on liver agar. The growth was washed off with saline, filtered through paper, centrifuged, and the bacterial deposit weighed. To every 10 grams of the deposit 100 c.cm. of saline were added. This suspension was placed in a boiling-water bath for four to five hours, centrifuged, and the deposit again taken up in saline and heated. The extraction with hot saline was repeated three times. The extracts were mixed, filtered through paper, reduced to a twentieth of their volume, and treated with five to six times their volume of absolute alcohol. This resulted in the formation of an abundant gelatinous whitish yellow precipitate giving both the carbohydrate and the protein reactions. After being reprecipitated twice with alcohol from an aqueous solution, it was dissolved in water and treated with an 0.6 per cent. aqueous solution of uranium acetate slightly acidified with acetic acid. The resulting precipitate was removed by filtration. The filtrate was treated with sodium phosphate to remove the uranium, and the phosphate was then precipitated as the ammonium-magnesium salt. The filtrate was treated with three to six volumes of absolute alcohol, and the resulting precipitate dissolved in water and reprecipitated two or three times with absolute alcohol. The final material obtained was a white powder, very soluble in water, failing to give any of the protein reactions, giving a strong Molisch reaction, containing 3 per cent. nitrogen, and being precipitated in high titre by sera prepared against *abortus*, *melitensis*, and *paramelitensis* strains.

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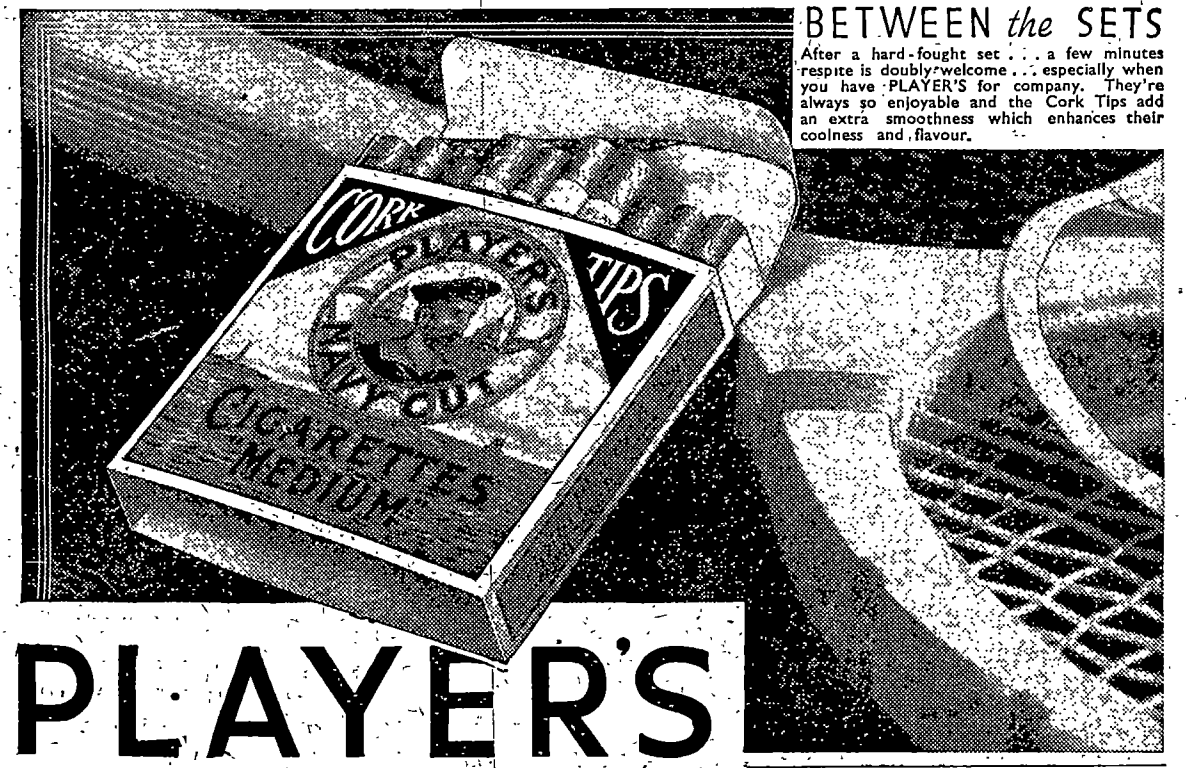

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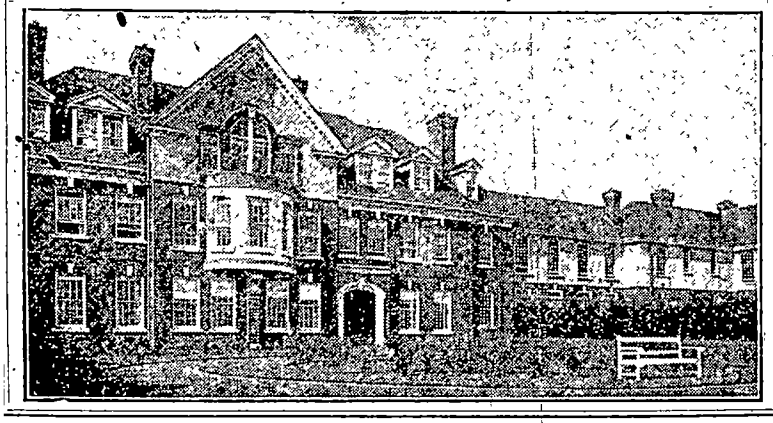

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Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

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THE WINTER SESSION will open on MONDAY, OCTOBER 1st.

THE HOSPITAL is the largest in England. There are 851 beds in constant use. Last year, In-patients, 14,515; Out-patients, 106,099 (attendances 502,194); Dental patients, 7,624; Major operations, 7,691.

THE MEDICAL COLLEGE AND DENTAL SCHOOL are essentially modern, with large laboratories equipped with the latest and most approved appliances.

VALUABLE SCHOLARSHIPS AND PRIZES are awarded annually, including four Open Entrance Scholarships and a Scholarship open to Students of the Universities of Oxford and Cambridge.

RESEARCH FUNDS of approximately £115,000 give unrivalled facilities for medical research.

APPOINTMENTS.—Over 160 appointments are made annually from Students of the College recently qualified.

SPECIAL COURSES are held for all the University Examinations for the Primary and Final Fellowship Examinations of the Royal College of Surgeons, and for the Membership Examinations of the Royal College of Physicians

HOSPITAL PRACTICE.—Exceptional opportunities are offered to qualified Practitioners wishing to attend the General Practice or the Practice of a Special Department of the Hospital.

Club's Union, Athletic Ground of 13 acres, Students' Hostel, etc.

For prospectus and particulars, apply to the Dean (Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S.), who will be pleased to make arrangements for anyone wishing to see the Medical College and Dental School. Mile End, E.1.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON),
Denmark Hill, S.E.5.

OPENING OF THE WINTER SESSION.

INTENSIVE POST-GRADUATE COURSE from 11 a.m. to 6 p.m. on Saturday, September 29th.

The PAST AND PRESENT STUDENTS' DINNER, at which Dr. Wilfrid Attenborough will preside, will be held on Saturday, September 29th, at 7.30 for 8 p.m. at the Connaught Rooms, Great Queen Street, Kingsway, W.C.2. The Dinner Secretaries are Dr. M. Sydney Thomson and Mr. Terence Cawthorne.

On Monday, October 1st at 4.30 p.m. the Inaugural Lecture will be given by Professor William Wright, D.Sc., M.B., F.R.C.S.

J. A. DRAKE, M.D., F.R.C.P., D.P.H., Dean.

DUNNOW HALL,

Newton-In-Bowland, Yorkshire.

A co-educational school for children who are physically or emotionally delicate, or who present special problems in development or conduct.

Modern methods under medical supervision. Own Farm.

Prospectus from the Medical Principal.

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An aid to Parents in the selection of Schools and Tutors.

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Contains particulars with illustrations of Preparatory, Private, and Public Schools for Boys and Girls, Tutors, Co-Educational Schools, Domestic Science, Secretarial Training, and Physical Training Colleges, etc.

ADVICE ALSO GIVEN, FREE OF ALL CHARGE.

J. & J. PATON, Educational Agents,
143, Cannon Street, London, E.C.4.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st, 1934, and January 3rd, 1935, and for the Diploma in Tropical Hygiene on January 10th and April 25th, 1935. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Laboratory Secretary, School of Tropical Medicine, Pembroke Place, Liverpool, 3.

GOLDEN SQUARE, THROAT, NOSE AND EAR HOSPITAL

LONDON, W.1

HONORARY MEDICAL STAFF

URGEONS: Mr. Lionel Colledge; Mr. Gilbert Chubb; Mr. F. Cunliffe Ormerod; Mr. A. R. Dingley; Mr. Gilbert H. Howells; Mr. J. F. Simpson.
SSISTANT SURGEONS: Mr. J. C. Hogg; Mr. J. Roydon Peacock; Mr. J. P. Monkhouse.
HYSICIANS: Dr. C. E. Lakin; Dr. H. C. H. Bull.
EUROLOGIST: Dr. L. R. Yealland.
OPHTHALMOLOGIST: Mr. M. S. Mayou.
GENERAL SURGEON: Mr. J. B. Hunter.
DENTAL SURGEON: Mr. B. Mendleson.
RADIOLOGIST: Dr. Hope.
ANAESTHETISTS: Dr. G. I. Moriarty; Dr. A. W. Matthew; Dr. S. Coffin; Dr. J. H. T. Challis; Dr. F. Longhurst; Dr. D. Lewis; Dr. C. Hochschild; Dr. G. Edwards; Dr. Blair Gould.

The Hospital has 100 beds for In-patients and an annual Out-patient attendance of over 60,000.

CLINICAL INSTRUCTION

Clinical instruction in the Diagnosis and Treatment of Diseases of the Ear, Nose, and Throat is given in the ut-patient Department from 2 to 5 p.m. daily, and on Tuesdays and Thursdays from 6 to 9 p.m. also. Major operations re performed every morning and afternoon, except Saturdays, in the In-patient Operating Theatres. Minor perations are performed in the Out-patient Operating Theatre on three mornings a week.

Practitioners and Medical Students are admitted to the practice of the Hospital as Post-Graduates. Clinical ssistants, whose duty it is to assist the staff, are appointed as vacancies occur.

For further information apply to the Dean: GILBERT H. HOWELLS.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL

MARYLEBONE ROAD, N.W.1

Medical Students and Qualified Practitioners admitted to the Practice of this Hospital. Unusual opportunities are afforded of seeing Obstetrical Complications and Operative Midwifery (about one half of the total admission being primiparous cases). Over 2,700 patients are admitted to the Wards annually, and in the Ante-natal Department there are over 20,000 attendances per annum.

Certificates awarded as required by the various Examining Bodies.

For rules, fees, etc., apply H. B. STOKES, Secretary-Superintendent.

UNIVERSITY OF LONDON
KING'S COLLEGE.

PRIMARY F.R.C.S.

A SPECIAL INTENSIVE COURSE in NATOMY and PHYSIOLOGY in preparation or the DECEMBER EXAMINATION, will commence on MONDAY, OCTOBER 22nd, 1934, and ill continue until the date of the examination. Fees for the Course: Twelve Guineas for both subjects, Eight Guineas for either subject. Further particulars from the Dean of the edical Faculty, King's College, Strand, W.C.2.

UNIVERSITY OF LONDON

Applications are invited for the WILLIAM ULIUS MICKLE FELLOWSHIP, which is of ie value of at least £200, and is awarded by ie Senate to the man or woman who, being esident in London and a graduate of the niversity, has, in the opinion of the Senate, one most to advance Medical Art or Science ithin the preceding five years. Applications ust be made before October 1st, 1934. Further articulars can be obtained from the Academic egistrar, University of London, South Kenington, S.W.7.

July 2nd, 1934.

UNIVERSITY OF GLASGOW.

FACULTY OF MEDICINE.

Notice is hereby given that the arrangement lready proposed and advertised whereby in and fter the year 1935 the period of admission of irst Year students in Medicine would be April stead of October *has been cancelled*, and iat the present system of admission in October ill be continued.

ROBT. BROUGH,
August, 1934. Registrar.

ROYAL NAVAL DENTAL SERVICE.

The Admiralty is prepared to receive applications for commissions as DENTAL OFFICERS n the Royal Navy. Two appointments are ffered.

Candidates must be below 28 years of age on ovember 1st (unless granted an allowance or age, not exceeding six months, in respect f a period served in a recognised whole-time ivil hospital appointment) and must be registered as British Graduates or Licentiates in ental Surgery.

Approved candidates will be required to ppear before a Selection Committee at the dmiralty, and to pass a medical examination y a Board of Naval Medical Officers as to their hysical fitness for entry.

A pamphlet outlining the conditions of service nd the forms to be completed by candidates ay be obtained on application to the Medical irector-General of the Navy, Admiralty, ondon, S.W.1.

Applications, accompanied by the necessary ocuments, must reach the Medical Director-eneral not later than October 1st.

MEDICAL CORRESPONDENCE COLLEGE,

19, Welbeck Street, London, W.1.

CONJOINT BOARD EXAMINATIONS

Candidates taking the First, Second, or Final Conjoint Examinations should make sure of passing at the first attempt by enrolling for the short intensive Revision Courses of the College.

POSTAL, ORAL, PRACTICAL, CLINICAL COURSES.

MICROSCOPE AND MUSEUM WORK.

Highly qualified Tutors with accurate knowledge of the special features of these examinations.

Write at once for booklet, "How to Pass the Conjoint Board Examinations." Sent free on application.

Address: The Secretary,
MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, London, W.1.

LEIGH INFIRMARY, LANCASHIRE.

Wanted, a RESIDENT HOUSE SURGEON, male, single, for Hospital of 85 beds. Salary £175, with rooms, fire, attendance, and board. Good quarters. The position is vacant on September 30th.

The appointment is for six months with eligibility for re-election. Must be good Anaesthetist. The appointment offers exceptional opportunities for surgery.

Applications to be addressed to Mr. J. A. SMITH, Secretary, 3, Silk Street, Leigh, Lancashire.

EGYPTIAN GOVERNMENT.

EGYPTIAN MINISTRY OF EDUCATION.

Applications are invited from fully qualified Medical Women for the post of LADY MEDICAL OFFICER for Girls' Schools under the Ministry of Education, Egypt.

Candidates should state their age and previous experience.

The successful candidate will be expected to devote her whole time to the work of the Ministry, and inspect Schools in the Provinces if required.

The salary will be £E.40 per month, subject to current Egyptian Government stamp duties (net equivalent in English money approximately £38 5s. 7d.).

A transfer allowance equal to one month's net salary will be paid to the successful candidate if resident in Europe.

The appointment is on contract for three years, and renewable for a further period if the work gives satisfaction.

Applications should be addressed to The Director, Egyptian Education Office, 39, Victoria Street, London, S.W.1, and received not later than September 15th.

CITY OF BIRMINGHAM.

MENTAL DEFICIENCY ACT COMMITTEE.

MONYHULL COLONY CERTIFIED INSTITUTION.

JUNIOR MALE ASSISTANT MEDICAL OFFICER.

The Committee invite applications for the above whole-time appointment from duly qualified and registered male Medical Practitioners. Candidates must have held for at least six months a medical or surgical residential appointment in a general hospital, and preference will be given to those with mental experience.

The commencing salary will be £350 per annum, rising by annual increments of £25, subject to satisfactory service, to £450 per annum, plus the usual residential emoluments of board, lodging, laundry, and attendance, valued at £200 per annum for superannuation purposes. An additional £50 per annum will be paid for the possession of an approved post-graduate qualification in psychological medicine. No married quarters are available.

The successful candidate will be required to pass satisfactorily a medical examination and after a probationary period to join the scheme under the Asylums and Certified Institutions (Officers' Pensions) Act, 1918. The appointment is subject to one month's notice on either side.

Applications, stating full particulars of qualifications, experience, and appointments held, accompanied by copies of three recent testimonials, must be addressed to the undersigned so as to be received not later than Friday, September 28th.

Council House, Birmingham. F. H. C. WILTSHIRE, Town Clerk.
August 27th, 1934.

THE RADIUM INSTITUTE,

Riding House Street, London, W.1.

Applications are invited for the post of HOUSE SURGEON. Candidates must be fully qualified, unmarried, and of British nationality. The appointment is for a term of six months, and the successful candidate will be required to take up his duties on October 1st next. The salary will be at the rate of £150 per annum, with board, lodging, and laundry.

Applications, stating age, qualifications, and experience, with copies of three recent testimonials, must be received at the Institute not later than the first post of Wednesday, September 12th.

THOS. A. GARNER, Secretary.

WARRINGTON INFIRMARY AND DISPENSARY.

The post of THIRD RESIDENT will fall vacant on October 1st, and applications are invited from male candidates who must be duly qualified Medical Practitioners and unmarried. Salary at the rate of £150 per annum, with board, lodging, and laundry.

At the expiration of six months term of office, and subject to the recommendation of the Medical Board, the Third Resident is appointed Second Resident and then Senior Resident for similar periods. Candidates should therefore be prepared, if successful, to remain at the Hospital for eighteen months in all.

Applications, stating age and qualifications, accompanied by copies of three recent testimonials, should be sent in not later than first post on Tuesday, September 11th. Chosen candidates will be interviewed on Friday, September 14th.

By Order,
HENRY L. BOOT,
August 31st, 1934. Supt. & Secretary.

ROYAL SALOP INFIRMARY, SHREWSBURY. (150 Beds.)

APPOINTMENT OF RESIDENT HOUSE PHYSICIAN.

Applications are invited from fully qualified men for the appointment of Resident House Physician, vacant September 17th. Salary £160 per annum, with board, residence, etc.

The appointment is for six months, subject to reappointment. Resident Staff comprises Resident Surgical Officer, House Physician, and Casualty Officer and Resident Anaesthetist. The Resident House Physician is Resident Officer to the Medical Wards of the Hospital under the direction of three Honorary Physicians, and is also Resident Officer to the Maternity Department for difficult cases under the direction of the Honorary Obstetrician.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three recent testimonials, to be sent to the undersigned not later than Sept. 12th.

Board Room. J. W. NOBLE,
August 25th, 1934. Secretary-Supt.

HULL ROYAL INFIRMARY. (367 Beds.)

Applications are invited from registered Medical Practitioners for the post of THIRD HOUSE SURGEON (Male), vacant now.

Salary at the rate of £150 per annum, plus residence, board, and laundry.

The appointment will be for six months, but will at any time be determinable by one month's notice on either side.

The Hospital is recognised by the Royal Colleges for the F.R.C.S. examinations.

The holder of the post will be eligible for promotion to a more senior post when a vacancy occurs.

Applications, giving particulars of age, qualifications, and nationality, together with copies of recent testimonials, should be addressed to the undersigned.

R. J. CARLESS,
August 29th, 1934. House Governor.

DAVID LEWIS NORTHERN HOSPITAL, LIVERPOOL.

(CLINICAL SCHOOL—UNIVERSITY OF LIVERPOOL.) (250 Beds.)

Applications are invited for the post of CASUALTY OFFICER (Male) for a period of six months commencing October 1st next.

Salary at the rate of £120 per annum, with board, residence, etc.

Applications, together with copies of testimonials, to be forwarded to the undersigned immediately.

THORNBURROW GIBSON,
Sept. 1st, 1934. Secretary-Supt.

DISTRICT INFIRMARY, ASHTON-UNDER-LYNE. (200 Beds.)

A HOUSE SURGEON required immediately.

Six months' appointment. The staff comprises a Resident Surgical Officer and three House Surgeons.

Salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER,
Sept. 3rd, 1934. Gen. Supt. & Secretary.

GREAT YARMOUTH GENERAL HOSPITAL. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two appointments).

Applicants must be male and unmarried. Duties to commence at once.

Salary at the rate of £140 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS, Secretary.

ANCOATS HOSPITAL, MANCHESTER.

ASSISTANT PATHOLOGIST (lady or gentleman). Whole-time appointment, no private work allowed. Salary £300 to £350 according to experience; live out. Lunch and tea provided.

RESIDENT MEDICAL OFFICER to commence duty on October 1st. One having held a previous appointment essential. Appointment for six months. Salary at the rate of £150 per annum, with board, residence, etc.

HOUSE PHYSICIAN. Applications are invited for the post of House Physician. Duties to include some Casualty work. Appointment for six months Salary at the rate of £100 per annum, with board, apartments, laundry, etc.

MEDICAL REGISTRAR (lady or gentleman). To assist the Honorary Physician in the Out-patient Department on Monday, Wednesday, and Thursday mornings. Honorarium £50 per annum. Appointment for twelve months, renewable on January 1st of each year.

Applications are invited for the above posts from duly qualified and registered Medical Practitioners. Applicants should state age, qualifications, experience, and give full particulars, and forward their applications on or before Wednesday, September 12th, together with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
General Supt. & Secretary.

THE PRINCESS BEATRICE HOSPITAL, Richmond Road, Earl's Court, S.W.5. GENERAL HOSPITAL—80 Beds.

RESIDENT MEDICAL OFFICER (male) required for a period of six months in the first place from October 1st, eligible for re-election. Salary at the rate of £150 per annum, with board, residence, and laundry. Previous Resident experience essential. Full particulars may be obtained from the Secretary, by whom applications, with copies of three recent testimonials, should be received not later than September 10th.

HOUSE PHYSICIAN & CASUALTY OFFICER (Male) required for a period of six months from October 1st. Salary at the rate of £110 per annum with board, residence, and laundry. Previous Resident experience desirable but not essential. Full particulars may be obtained from the Secretary by whom applications, with copies of three recent testimonials, should be received not later than September 10th.

HOUSE SURGEON AND CASUALTY OFFICER (Male) required for a period of six months from October 1st. Salary at the rate of £110 per annum, with board, residence, and laundry. Previous Resident experience desirable but not essential. Full particulars may be obtained from the Secretary by whom applications, with copies of three recent testimonials, should be received not later than September 10th.

PRINCESS ELIZABETH OF YORK HOSPITAL FOR CHILDREN, Shadwell, London, E.1. (Formerly East London Hospital for Children.) (135 Beds).

The following Medical Officers are required on October 1st:

(1) HOUSE PHYSICIAN.
(2) CASUALTY OFFICER.

Candidates are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Saturday, September 15th, with copies of not more than three recent testimonials, and evidence of having held a responsible Hospital appointment. The appointments are for six months. Salary in each case at the rate of £125 per annum, with board, residence, and laundry. Candidates must possess a legal qualification to practise. Forms of application and copies of the rules may be obtained from

J. F. RUSSELL,
August 27th, 1934. Secretary.

CHELTENHAM GENERAL AND EYE HOSPITALS.

The Board of Management invite applications for the post of HOUSE PHYSICIAN (male) at the General Hospital.

Candidates must be unmarried, have a registered qualification in Medicine and Surgery, and produce evidence that they are qualified to administer anaesthetics.

Salary £200 p.a., with board, lodging, and laundry.

Applications, with copies of testimonials, to be sent in sealed envelopes marked "House Physician" to the undersigned by Sept. 15th.

J. CUMMING SMITH, F.C.I.S.,
The General Hospital, Secretary.
Cheltenham. Sept. 3rd, 1934.

CITY MENTAL HOSPITAL, NOTTINGHAM.

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (Male), single, preferably with some Post-graduate General Hospital experience. Salary £350 to £450 per annum by four £25 increases, all found, with an additional £50 per annum on obtaining the D.P.M. The Hospital has a well-equipped Laboratory. Application, with fullest particulars, should be sent to the Medical Superintendent forthwith.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond Street, London, W.C.1.

A HOUSE PHYSICIAN and a HOUSE SURGEON are required on October 14th and 18th respectively.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock, on Monday, October 1st, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, October 3rd, at 5 p.m. precisely.

Forms of application and copies of the Rules may be obtained from the Secretary.

HERBERT F. RUTHERFORD,
August, 1934. Secretary.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL, Haverstock Hill, N.W.3.

APPOINTMENT OF CASUALTY MEDICAL OFFICER.

Applications are invited from unmarried registered Medical Women for the position of Casualty Medical Officer at the Out-patient Department of the Hospital, Bayham Street, Camden Town, N.W., which will be vacant on October 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on September 15th next.

ST. BARTHOLOMEW'S HOSPITAL.

WHOLE-TIME REGISTRAR IN THE CANCER DEPARTMENT.

Applications are invited for the post of Whole-time Registrar in the Cancer Department of the above Hospital.

The salary will be at the rate of £500 per annum.

The duties will be to assist in co-ordinating the work of Cancer throughout the Hospital and to carry out such research work as may be approved by the Director of the Cancer Department.

Applications should reach the undersigned not later than Monday, September 17th.

THOMAS HAYES,
July 3rd, 1934. Clerk to the Governors.

ST MARY'S HOSPITAL, W.2.

HONORARY MEDICAL AND SURGICAL STAFF.

Applications are invited for the post of PHYSICIAN in charge of the DEPARTMENT FOR DISEASES OF THE SKIN. Candidates for the appointment are requested to forward their applications with copies (not originals) of testimonials (not exceeding six in number) addressed to the House Governor of the Hospital, on or before September 26th.

Candidates must be Fellows or Members of the Royal College of Physicians of England.

The appointment is for five years, at the expiration of which time the holder will be eligible for re-election.

W. PARKES, House Governor.

NORFOLK AND NORWICH HOSPITAL, NORWICH. (392 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned not later than Tuesday, September 18th.

FRANK INCH,
Sept. 7th, 1934. House Gov. & Secretary.

NORFOLK AND NORWICH HOSPITAL, NORWICH. (392 Beds.)

Applications are invited for the post of HOUSE SURGEON to the Special Departments (Ear, Nose, and Throat, and Ophthalmic). Salary £120 per annum, with board, residence, and laundry. Candidates (male) who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned as soon as possible.

FRANK INCH,
August 10th, 1934. House Gov. & Sec.

BIRMINGHAM AND MIDLAND SKIN HOSPITAL,
John Bright Street, BIRMINGHAM, 1.

Applications are invited from registered Medical Practitioners to act as CLINICAL ASSISTANTS in the Out-patient Consulting Room each afternoon, except Saturdays and Sundays.

Honorarium at the rate of half a guinea per attendance for one afternoon per week. Appointments tenable for one year, commencing October 1st.

Applications (one copy), stating age, qualifications, experience, and afternoons at liberty, should be addressed to the Secretary not later than September 12th.

The work of the Hospital can be seen each afternoon by doctors and bona-fide students.

HUBERT SUMNER, General Secretary.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.11. (121 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). The post is that of Senior Resident Officer, and the work being chiefly Surgical, preference will be given to candidates holding the F.R.C.S. qualification.

The appointment is for twelve months commencing on October 1st.

Salary £200 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before September 12th.

W. S. RANDOLPH BISS, Secretary-Supt.

YORKSHIRE CHILDREN'S ORTHOPAEDIC HOSPITAL, KIRBYMOORSIDE, YORK. (106 Beds.)

Applications are invited for the position of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. Salary increasing to £200 per annum after six months' service. Previous Orthopaedic experience is not necessary, but preference will be given to candidates who have held resident hospital appointments and who are competent anaesthetists.

Applications, with copies of not more than three recent testimonials, should be sent to me at the above address, to arrive not later than first post on Saturday, September 15th.

P. HANKS, Secretary.

ROYAL DEVON AND EXETER HOSPITAL, EXETER. (225 Beds.)

SENIOR HOUSE SURGEON (Male).

Applications are invited for the above Resident appointment becoming vacant at this Hospital on October 1st. Engagement for twelve months, candidates eligible for re-election.

Salary at the rate of £250 per annum, with board, apartments, and washing.

Applications, stating age, qualifications, and copies of three recent testimonials, should be sent to the undersigned on or before Monday, 17th inst.

S. S. COLE,
Sept. 1st, 1934. Secretary & Manager.

BURY INFIRMARY, LANCS. (127 Beds.)

Applications are invited for the post of HOUSE SURGEON to Special Departments, which include Midwifery and Gynaecology, Eye, Ear, Nose, and Throat. The appointment is for six months at a salary at the rate of £175 per annum, with board, residence, and laundry. The successful applicant will be required to commence duties as soon as possible.

Applications, stating age, qualifications, and nationality, with copies of three recent testimonials, to be sent to the undersigned not later than September 12th.

Particulars of duties may be had on application.

ALEX. W. MAITLAND, Hon. Secretary.

LADY CHICHESTER HOSPITAL, HOVE (Brighton), FOR FUNCTIONAL NERVOUS DISEASES. (60 Beds.)

SENIOR HOUSE PHYSICIAN (Woman) required on October 1st. Six months' appointment. £100 per annum, all found. Also JUNIOR at £50 per annum. Valuable experience for Diploma in Psychological Medicine. Applications, with testimonials, to the Secretary, 10, Old Steine, Brighton.

August 17th, 1934.

MARGATE AND DISTRICT GENERAL HOSPITAL. (98 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male).

Salary £150 per annum, with board and laundry. Duties to commence at earliest possible date.

Applications, accompanied by copies of testimonials, should be addressed to the Secretary at the Hospital as early as possible.

MANCHESTER ROYAL INFIRMARY.

JUNIOR ASSISTANT MEDICAL OFFICER IN RADIOLOGICAL DEPARTMENT.

The Board of Management invite applications for the above part-time appointment, viz., 9 a.m. to 1 p.m. daily. Applicants must be registered and hold a Medical and Surgical qualification, and the D.M.R.E.

The appointment (non-resident) is for twelve months, renewable for a further period of twelve months, subject to the provisions of the by-laws as to notice. Salary is at the rate of £200 per annum. Applicants must state age and send twelve copies of their application and testimonials to the undersigned by Thursday, September 20th.

B. Order,
R. TINDALE,
For Gen. Supt. & Secretary.

WINSLEY SANATORIUM, near BATH.

The Governors invite applications for the appointment of a whole-time ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250, with apartments, board, laundry, etc.

The appointment will be made for a period of twelve months (subject, however, to termination during such period by one calendar month's notice on either side).

Applicants should state age, qualifications, experience, etc., and submit three testimonials by September 17th next.

T. A. W. CARLISLE,
Winsley Sanatorium, Secretary.
Near Bath. August 23rd, 1934.

THE BURSLEM HAYWOOD AND TUNSTALL WAR MEMORIAL HOSPITAL,
High Lane, BURSLEM, STOKE-ON-TRENT.

Applications are invited for the post of SENIOR HOUSE SURGEON (salary £175 per annum, with board, residence, and laundry). Must be fully qualified and have had some experience in Hospital Surgical work.

Six months' appointment and eligible, on completion of service, for further extension of six months.

Applications, stating age, nationality, qualifications, with copies of three recent testimonials, to be sent to the undersigned.

C. E. LOWNDES, Secretary.

CENTRAL HOSPITAL, PLYMOUTH. (50 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry. Appointment is tenable for six months and subject to renewal. Duties to commence October 1st.

Candidates who must be registered under the Medical Acts, should state age, nationality, and qualifications, together with copies of not more than three recent testimonials in their applications, to be sent to the undersigned not later than Saturday, September 15th.

WM. W. URELL, F.C.C.S.,
September 2nd, 1934. Secretary.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street, W.C.1.

Applications are invited for the post of ASSISTANT SURGEON to the above Hospital. Candidates must be Fellows of the Royal College of Surgeons (Eng.), or hold the degree of M.S. London in Ophthalmology, and must have held the post of Clinical Assistant for two years at least at a recognised Ophthalmic Hospital.

Applications, with copies of not more than four testimonials, must be received by the Secretary not later than September 28th, and candidates must be prepared to attend at the Hospital on Thursday, Oct. 11th, at 4.30 p.m.

GEORGE WATTS, Secretary.

CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL, Gray's Inn Rd., W.C.1.

ASSISTANTS IN THE OUT-PATIENT DEPT.

There are the following vacancies:
Second Assistant for attendance on Wednesdays at 2 p.m.
Second Assistant for attendance on Fridays at 2 p.m.

The duties are to assist the Surgeons in seeing the patients and the posts are honorary.

Applications should be sent to the undersigned immediately.

JOHN H. YOUNG, Secretary-Supt.

BUTE HOSPITAL, LUTON.

HOUSE SURGEON (male) wanted to commence duties on October 1st. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, and experience, together with copies of not more than three recent testimonials, should be sent to the Secretary of the Medical Advisory Committee at the Hospital.

R. E. LINGARD,
Bute Hospital. Secretary.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone Rd., N.W.1.

ASSISTANT RESIDENT MEDICAL OFFICER (Male) required to commence duty on Oct. 1st.

Applicants must be registered. Appointment for three months. On completion of this appointment the selected candidate will be expected to proceed to the post of Senior Resident Medical Officer (for three months) on the recommendation of the Medical Staff.

The salary of the Assistant Resident Medical Officer is at the rate of £80 per annum and of the Senior Resident Medical Officer £100 per annum, with board, residence, and washing allowance (4/- weekly).

Applications, with copies (not originals) of not more than three testimonials will be received by the Secretary up to September 21st.

H. B. STOKES, Secretary-Supt.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone Road, N.W.1.

DISTRICT RESIDENT MEDICAL OFFICER (male or female) required to commence duty on October 1st. Applicants must be registered. The appointment is for six months. The salary is at the rate of £80 per annum, with board, residence, and washing allowance (4/- weekly).

Applications, with copies (not originals) of not more than three testimonials, should be sent to the Secretary by September 21st.

H. B. STOKES, Secretary-Supt.

SOUTHEND-ON-SEA GENERAL HOSPITAL. (235 Beds—Six Residents.) Specialist Staff of 18 Members.

Applications are invited for the post of HOUSE SURGEON. The appointment is for six months from October 1st. Salary at the rate of £100 per annum, with board, residence, and laundry.

Candidates must be registered (male) practitioners. Application forms may be obtained from the undersigned, and must be returned not later than Saturday, September 15th. The appointing Committee meets on Saturday, September 22nd.

C. G. PEARSON,
P. H. CONSTABLE,
Joint Secretaries.

BIRKENHEAD GENERAL HOSPITAL. (156 Beds.)

Applications are invited for the position of CASUALTY OFFICER (Male) for the six months commencing October 1st. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, nationality, and qualifications, together with three recent testimonials, to reach the undersigned as early as possible.

W. H. DANIELS, F.C.I.S.,
Secretary-Superintendent.

COVENTRY & WARWICKSHIRE HOSPITAL.
Main Hospital 307 Beds;
Convalescent Hospital 40 Beds.
Seven Resident Medical Officers.

RESIDENT CASUALTY OFFICER (Male) wanted. Salary £125 per annum, with board, laundry, and attendance. Candidates must be duly qualified and registered.

Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned.

(Miss) R. HOOPER, Secretary.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, 60, Grove End Rd., N.W.8.

Applications are invited for the post of RESIDENT HOUSE SURGEON (Male). The appointment will be for six months from November 1st. Salary at the rate of £75 per annum, with full board. Applications, together with copies of three testimonials, should reach the undersigned not later than the first post on Friday, September 28th.

F. DUDLEY HOBBS, Secretary.

KING EDWARD VII HOSPITAL, WINDSOR. (193 Beds.)

HOUSE SURGEON required for six months from October 1st. Applicants must be fully qualified men or women and registered.

Salary at the rate of £100 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials should be sent to the undersigned not later than September 15th.

A. E. CHURCHER, Secretary.

BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN.

HOUSE SURGEON (man or woman) wanted for six months from October 1st. Salary to be at the rate of £100 per annum.

Applications, with full particulars and copies of testimonials, to be sent not later than September 14th to HUGH C. ASTON, 45, Newhall Street, Birmingham.

NOTTINGHAM CHILDREN'S HOSPITAL.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN (Woman). The salary will be at the rate of £150 per annum, with apartments, board, and laundry. The appointment will be for six months, duties to commence on November 1st.

Applications, together with testimonials, and stating age, qualifications, and experience, to be sent to F. PRAGNELL, the Honorary Secretary, 1, King John's Chambers, Bridlesmith Gate, Nottingham, by September 17th. Selected candidates will be required to attend at the Hospital for a personal interview on September 25th, when the appointment will be made.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL (Incorporated by Royal Charter), Broad Street, Holborn, London, W.C.2.

A REGISTRAR is required to commence duty on November 1st. Salary at the rate of £150 per annum for attendance on three afternoons a week. Candidates must have had considerable ophthalmic experience, and should send in applications, accompanied by copies of three testimonials, to the Secretary on or before September 29th.

NOTE.—Intending candidates are requested to call upon the Staff of the Hospital, a list of whom can be obtained from the General Office.

SALFORD ROYAL HOSPITAL. (263 Beds.)

Applications are invited from registered (male) candidates for:

TWO HOUSE SURGEONS;
CASUALTY HOUSE SURGEON;

for six months from October 1st. Salary £125 per annum.

Forms of application, obtainable from the undersigned, should be delivered on or before September 11th next.

By Order of the Board,
H. B. SHELSWELL,
August 27th, 1934. Gen. Supt. & Sec.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.1.

Applications are invited for the post of HOUSE SURGEON for a period of six months commencing on November 1st next. Salary at the rate of £100 per annum, with board, lodging, and laundry. Previous experience as House Surgeon essential.

Applications, accompanied by copies only of three testimonials, must reach the Secretary at the Hospital on or before Saturday noon, September 22nd.

G. H. HAWKINS, Secretary.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL.

Applications are invited for the post of HOUSE SURGEON, male, for a period of six months commencing October 1st, renewable for a further period of six months on the recommendation of the Medical Board. £150 per annum, with full board, quarters, and laundry. Applicants should be registered Medical Practitioners. Applications to be addressed to the House Governor, 234, Great Portland Street, W.1, not later than September 17th.

ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS, MARGATE. (320 Beds.)

Applications are invited for the post of VISITING SURGEON for Ear, Nose, and Throat cases at this Hospital.

An honorarium of twenty-five guineas per annum, plus first-class railway fares is offered. The appointment is subject to the laws and rules of the Hospital. Applications accompanied by one testimonial should reach the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, W.C.2, on or before the Sept. 24th.

ROYAL HOSPITAL, RICHMOND, SURREY.

JUNIOR HOUSE SURGEON (Male) required to take up duties on October 1st. Salary at the rate of £100 per annum, with board, furnished apartments, and laundry. Candidates must be fully qualified, registered, and single. The appointment will be for six months, after which the successful candidate will be eligible for the senior post. Applications, stating age, experience, and copies of three recent testimonials, must be forwarded to the Secretary-Superintendent immediately.

ROYAL INFIRMARY, BLACKBURN.

RESIDENT HOUSE PHYSICIAN (Male) required at a salary of £175 per annum, with board, residence, laundry, etc.

In addition to Medical Wards, to be attached to Eye, Ear, Nose, and Throat Department. To commence duties October 1st.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, Blackburn. T. DEWHURST, Gen. Supt. & Secretary.

ROYAL ALBERT HOSPITAL AND EYE INFIRMARY, DEVONPORT.

The post of ASSISTANT HOUSE SURGEON exists.

Applicants must be fully qualified, registered, and unmarried. Salary £100 per annum, with apartments, board, and laundry free.

Applications, stating age, accompanied by copies of not more than three testimonials, should be forwarded to the undersigned without delay.

By Order of the Committee,
FRANK ROWE, Secretary.

KENT AND CANTERBURY HOSPITAL, CANTERBURY. (137 Beds.)

HOUSE SURGEON (Male) required to commence duties at end of September. Six months' appointment. Salary payable at the rate of £125 per annum, plus board, residence, and laundry. There are two other Resident Medical Officers. Duties include care of Ear, Nose, and Throat cases.

Applications, stating age, and particulars of qualifications, and enclosing copies of testimonials, should be forwarded to the undersigned as soon as possible.

J. F. KENT, Supt. & Secretary.

MONTAGU HOSPITAL, MEXBOROUGH, YORKS.

Applications are invited for the position of JUNIOR HOUSE SURGEON at the above Hospital. Commencing salary £100 per annum, with 1 month holiday annually. The usual board-residence is also found. The Hospital has 64 Surgical beds, and 20 Maternity beds. Applicants should state their experience in the administering of Anaesthetics, and give the earliest date they will be at liberty to take up duties. Applications should be forwarded to the undersigned, together with testimonials, at the earliest possible moment.

DONALD WILSON, Secretary.

THE BUCHANAN HOSPITAL, ST. LEONARDS-ON-SEA. (103 Beds.)

Applications are invited from British subjects for the post of JUNIOR HOUSE SURGEON (female) commencing October 1st, for a period of six months with option of a further six months as Senior House Surgeon from April 1st, 1935. Salary at rate of £125 p.a.

Applications, stating age, qualifications, and experience, and accompanied by copies of at least three testimonials should be sent to the undersigned on or before September 13th.

FRANK HART, Acting Secretary.

THE NELSON HOSPITAL, Merton, S.W.20. (86 Beds—65 General, 21 Maternity.)

Wanted, October 1st, RESIDENT HOUSE SURGEON (male, unmarried). Applicants should have a good knowledge of Obstetrics and Gynaecology. Appointment for six months in first instance. Salary at the rate of £100 per annum. Candidates must be British by nationality and birth.

Applications, with copies of two testimonials, should be sent to the Secretary not later than September 21st.

ABERDEEN CITY MENTAL HOSPITAL, KINGSEAT, NEWMACHAR.

Applications are invited for the post of JUNIOR ASSISTANT MEDICAL OFFICER (Male). Salary £300 per annum, with board, residence, and laundry. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Applications, stating age and qualifications, with copies of recent testimonials, should be sent to the Medical Superintendent.

WESTMORLAND SANATORIUM, NEAR GRANGE-OVER-SANDS. (150 Beds.)

Applications for the post of HOUSE PHYSICIAN for a period of six months, are invited for the above Sanatorium. Salary £250 per annum, with board, lodging, and laundry. Previous Sanatorium experience will be an additional qualification. Applications, giving all necessary particulars along with copies of not more than three testimonials, should reach me not later than September 19th.

J. MUNRO CAMPBELL.
Medical Superintendent.

NATIONAL TEMPERANCE HOSPITAL, Hampstead Road, N.W.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (Male). The appointment will be for a period of six months at a salary of £175 per annum, and will date as from September 21st next. Preference will be given to those who have held resident posts.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, September 14th, addressed to the Secretary.

THE CHILDREN'S HOSPITAL, BIRMINGHAM.

ASSISTANT RESIDENT MEDICAL OFFICER.

Applications are invited for the above post. Candidates must be qualified and registered.

The salary attaching to the post is at the rate of £125 per annum, with board, residence, and laundry. The appointment is tenable for one year.

Candidates should forward their application, with proof of registration and any credentials which they may desire to offer, to the undersigned as soon as possible. The Assistant Resident Medical Officer is attached to Professor PARSONS, with 30 beds, and acts as Assistant to the Pathologist.

HAROLD F. SHRIMPTON, House Governor.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.1.

Applications are invited from duly qualified and registered Medical Women for the post of ANAESTHETIC REGISTRAR at the above Hospital for one year from November 1st next, with option to apply for re-appointment for two subsequent years.

The post is a resident one and carries with it a remuneration of £100 per annum. Candidates should have had experience in all forms of anaesthesia, especially dental work.

Applicants should submit applications, stating age and qualifications, to the undersigned on or before September 29th.

RICHARD S. BARTLEY, Acting Sec.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.1.

Applications are invited for the post of HOUSE PHYSICIAN (male) for six months from October 12th (first two months in Casualty and Out-patient Department). Salary at the rate of £120 per annum, with board and residence.

Applications, stating age, experience, and qualifications, accompanied by copies of four testimonials, to be sent not later than September 24th to the undersigned, from whom rules and other particulars can be obtained.

By Order of the Committee of Management,
W. H. SIDNELL,
Sept. 3rd, 1934. Secretary-Supt.

LIVERPOOL ROYAL INFIRMARY. (Medical School—336 Beds.)

THREE HOUSE SURGEONS FOR SPECIAL DEPARTMENTS (Aural, Eye, and Skin, respectively), including Rota Duty for Casualties. Required for six months commencing Oct. 1st.

Candidates must be duly registered under the Medical Acts.

Salary at the rate of £60 per annum, board, residence, etc.

Applications, stating age, qualifications, where graduated, nationality, and enclosing copies of testimonials, to be sent to the undersigned as soon as possible.

WM. RUTTER,
September 3rd, 1934. Gen. Supt. & Sec.

VICTORIA HOSPITAL FOR SICK CHILDREN, HULL (Incorporated).

RESIDENT HOUSE PHYSICIAN (Lady) required to commence duty on October 1st. Salary £100 per annum. Also RESIDENT HOUSE SURGEON (Lady) to commence duty on November 1st. Salary £100 per annum. With board, residence, and laundry.

Applications, with copies of recent testimonials, stating age, qualifications, and other particulars to be sent to the Secretary not later than September 15th.

THE MOTHERS' HOSPITAL OF THE SALVATION ARMY, Lower Clapton Road, Clapton, E.5.

Applications are invited from Medical Women for the post of JUNIOR RESIDENT MEDICAL OFFICER, vacant October 1st. Salary £80 per annum, with board, residence, and laundry. The appointment is for six months.

Applications, with testimonials, must be sent to the Secretary on or before Friday, Sept. 14th.

EDGAR DIBDEN Secretary.

THE INFANTS HOSPITAL, Vincent Square, Westminster.

Applications are invited for the post of HOUSE PHYSICIAN. Salary at the rate of £75 per annum, with board, residence, and laundry. Applications, with copies of testimonials, to be forwarded to the undersigned not later than September 17th.

ALFRED J. SMALL, Secretary.

THE KIDDERMINSTER AND DISTRICT GENERAL HOSPITAL.

HOUSE SURGEON (Male) required. Salary £150 per annum, with residence, board, and laundry. Applications, with not more than three testimonials, to be sent to the Secretary, Miss SUSAN SMITH, South Cliff, Kidderminster.

COUNTY COUNCIL OF MIDDLESEX.

THE COUNTY (TUBERCULOSIS) SANATORIUM HAREFIELD; MIDDLESEX.

RESIDENT ASSISTANT MEDICAL OFFICER (Male).

The County Council invite applications for the above appointment. Candidates must be registered Medical Practitioners, not over 35 years of age, unmarried, and of British nationality. They must have held resident hospital appointments. Practical experience in the diagnosis and treatment of tuberculosis (including the induction of artificial pneumothorax) will be an additional qualification.

The officer appointed will work under the control of the Medical Superintendent, and devote his whole time to his official duties.

Salary £400 per annum, rising by annual increments of £25 to £475, with board, lodging, and laundry, valued at £100.

The appointment will be held during the pleasure of the Council, and is determinable by one month's notice on either side.

The appointment is a temporary one for a period of four years, at the end of which period the officer will leave the Council's service. In special cases the Council may decide to retain an officer on the established staff, in which case the salary will be increased to £500 per annum, which will be the maximum for an officer in this grade.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than September 22nd.

Canvassing, directly or indirectly, will be a disqualification.

Special application forms are not provided. Envelopes must be endorsed "Assistant Medical Officer, Harefield."

ERNEST S. W. HART
Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.
September 3rd, 1934.

DERBYSHIRE ROYAL INFIRMARY, DERBY.
(General Hospital—360 Beds.)

Applications are invited for the post of HOUSE SURGEON for General Surgery and Ear, Throat, and Nose Department.

Candidates must be qualified and registered under the Medical Acts.

The appointment is for twelve months.

Salary will be £150 per annum, with apartments; board, etc.

Applications, with copies of testimonials, to be sent to the undersigned.

Duties commence September 14th.

WALTER BANKS,
Supt. & Secretary.

August 27th, 1934.

DERBYSHIRE ROYAL INFIRMARY, DERBY.
(General Hospital—360 Beds.)

Applications are invited for the post of CASUALTY OFFICER AND ORTHOPAEDIC HOUSE SURGEON.

Candidates must be qualified and registered under the Medical Acts.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned.

Duties commence October 1st.

WALTER BANKS,
Supt. & Secretary.

August 27th, 1934.

SCARBOROUGH HOSPITAL & DISPENSARY.
(70 Beds—Two Resident House Surgeons.)

Wanted, November 1st, ONE HOUSE SURGEON (female).

Duties include Home Visiting (daily average 1933, 2.5 visits).

Salary at the rate of £175 per annum, with board, residence, etc.

Appointment until April 30th, 1935.

Applications, stating age, with copies of testimonials and essential particulars, to be sent to the Hon. Secretaries, from whom all further particulars may be obtained, not later than September 17th.

WANTED.—RESIDENT ASSISTANT MEDICAL OFFICER for a period of twelve months. Salary £350 per annum. Apply for forms of application from the Medical Superintendent, Cheshire Joint Sanatorium, Market Drayton, Salop

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CHESHIRE JOINT SANATORIUM, MARKET DRAYTON.

Wanted, RESIDENT ASSISTANT MEDICAL OFFICER (Male) for a period of twelve months. Salary £350 per annum. Forms of application from the Medical Superintendent.

LONDON COUNTY COUNCIL.

Applications invited for appointment as RESIDENT MEDICAL SUPERINTENDENT, Southern Hospital, Dartford, the Upper Hospital (777 beds) for convalescent infectious cases and Lower Hospital (767 beds) for acute or convalescent infectious cases or for convalescent non-infectious cases. Person appointed will be under direction of Medical Officer of Health and must assist at other establishments of the Council if so required. Salary £1,100—£50—£1,350 a year, with the emolument of unfurnished house or quarters, including payment by the Council of local and water rates, valued for superannuation purposes at £100 a year, subject to review. Candidates other than members of the Council's medical staff must be not over 55 years of age; must have been duly qualified medical practitioners for at least five years, and house physician or house surgeon in a public general hospital and have had experience of administration of hospital for infectious diseases. Experience in small-pox is desirable but not essential. Application forms obtainable (stamped addressed foolscap envelope necessary) from Clerk of the Council, County Hall, S.E.1, returnable by September 24th. Canvassing disqualifies.

LONDON COUNTY COUNCIL.

Applications invited from Medical Practitioners for appointment as ASSISTANT MEDICAL OFFICER (Grade I) at ST. JOHN'S HOSPITAL, St. John's Hill, S.W.11. Salary £350, rising annually by £25 to £425. Candidates must be Medical Practitioners of at least one year's standing and have held a resident appointment in general hospital for at least six months. Preference will be given to candidate who possesses the Diploma in Psychological Medicine and psychiatric experience is essential. No accommodation for a married man or for a woman. Duties assigned by Medical Superintendent and include if necessary assistance at other establishments under Council's control.

Application forms obtainable (stamped addressed foolscap envelope necessary) from Medical Officer of Health (Staff Division 3a), County Hall, S.E.1, returnable by September 19th. Canvassing disqualifies. Further enquiries should be addressed to Medical Superintendent at the hospital.

WEST LONDON HOSPITAL, Hammersmith Road, W.6. (235 Beds.)

Required, ONE HOUSE PHYSICIAN, ONE HOUSE SURGEON (General and some Deep X-Ray Therapy), ONE HOUSE SURGEON for Throat, Nose, and Ear Department (with some anaesthetic duties). These three appointments (males) are tenable for six months from October 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodgings, and laundry allowance.

Candidates must be registered under the Medical Act. Applications (which must be on printed forms, obtained from me) must reach me not later than Thursday, September 13th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at the Medical Council Meeting on Friday, September 21st at 4.30 p.m. and the House Committee Meeting at 5 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

MANCHESTER ROYAL EYE HOSPITAL.

Vacancy now occurs for a JUNIOR HOUSE SURGEON. Salary £120 per annum, with board, residence, etc. Applications (with copies of testimonials), endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management not later than September 15th.

H. R. NORTH, Gen. Supt. & Secretary.

THE DEWSBURY AND DISTRICT GENERAL INFIRMARY. (New Hospital of 100 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age and Hospital experience, together with copies of three recent testimonials, to be sent to the undersigned before September 11th.

FRED SMITH, Secretary-Superintendent.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN. (100 Beds.)

HOUSE SURGEON (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing. Good experience, including Sun-ray Treatment. No canvassing. To commence duty immediately.

Applications, in writing, accompanied by testimonials, should be sent to PERCY F. SPOONER, Secretary, Dyke Road, Brighton.

August 13th, 1934.

CITY AND COUNTY OF NEWCASTLE-UPON-TYNE.

CITY HOSPITAL FOR INFECTIOUS DISEASES.

RESIDENT MEDICAL ASSISTANT (Male).

Wanted immediately, a Resident Medical Assistant (male), who holds a registrable qualification in Medicine and Surgery, and possesses a practical knowledge of Bacteriology. The holding of a previous resident appointment and some experience of general practice will be considered a recommendation.

Salary £350 per annum, with board, lodging, etc.

The appointment is for the period of one year only.

Applications, on the prescribed form, which can be obtained on application to the Medical Officer of Health, Town Hall, Newcastle-upon-Tyne, must be submitted not later than Tuesday, September 18th.

September 3rd, 1934.

NORTHAMPTON GENERAL HOSPITAL.
(254 Beds.)

There will be vacancies on October 1st next for Five Male Resident Medical Officers: ONE HOUSE PHYSICIAN, TWO HOUSE SURGEONS, ONE HOUSE SURGEON to the Ear, Nose and Throat Department, and ONE CASUALTY OFFICER.

One of the candidates will be appointed Senior Resident Medical Officer for twelve months at a salary of £250 per annum. Applicants are required to state whether they will be willing to stay for this period.

The other appointments will be made for six months, and the salary will be £150 per annum. All appointments include board, residence, and laundry.

British nationality. Candidates must be duly qualified and registered.

Applications, stating age, qualifications, etc., with copies of testimonials, to reach the undersigned not later than the first post on Wednesday, September 12th.

H. ST. JOHN WOOD,
Secretary-Supt.

August 27th, 1934.

ST. PAUL'S HOSPITAL FOR DISEASES (INCLUDING CANCER) OF THE GENITO-URINARY ORGANS AND SKIN, Endell St., Holborn, W.C.2.

Applications are invited for the undermentioned position:

HOUSE SURGEON (vacant October 19th). Candidates must be qualified and registered. Salary at the rate of £150 per annum, with board and residence. The appointment is for a period of six months, on the termination of which the holder is eligible for the position of Resident Medical Officer, in which capacity he will have charge of the Surgical beds. During his appointment as House Surgeon the duties will involve work in the Surgical Wards and in the Out-patient Department. Applications, with copies of recent testimonials, to be sent on or before October 1st to the Chairman of the Medical Committee.

ACTON HOSPITAL, W.3.

JUNIOR RESIDENT MEDICAL OFFICER (male, unmarried), required to commence duties October 1st, with promotion to Senior appointment on January 1st, 1935, if satisfactory. Commencing salary £150 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered. Applications, stating age, nationality, and qualifications, together with a copy of three recent testimonials, should reach the Secretary, Acton Hospital, Gunnersbury Lane, W.3, by Saturday, September 15th.

DONALD C. D. SWORD,
Secretary.

September 5th, 1934.

MERTHYR GENERAL HOSPITAL.
(118 Beds.)

HOUSE SURGEON required for a period of six months.

Applications, stating age, nationality, and qualifications, with three recent testimonials (copies only), to be sent to the Hon. Secretary of the Hon. Medical Staff at the above. Salary at the rate of £150 per annum, with board, furnished rooms, and laundry.

Duties to commence at once.

WORTHING HOSPITAL.

Applications are invited for the post of HOUSE SURGEON, vacant September 20th. The appointment is for six months, renewable (determinable by three months' notice on either side). Salary at the rate of £150 per annum, with board, lodging, and laundry.

Applications, giving age, qualifications, nationality, etc., together with copies of testimonials, to be sent to the Secretary at once.

A. O. KAYE, Secretary.

(Appointments continued on p. 42)

NOT CLASSIFIED.

WANTED. — SEPTEMBER (ABOUT END), for ten days, Woman Doctor, FURNISHED FLAT, London, very central, in return for occasional SERVICES at night (if any).—Address, No. 5342, B.M.A. House, Tavistock Square, W.C.1.

ACCOUNTS COLLECTED FOR DOCTORS tactfully, expeditiously, and economically without proceedings; many successes. No fees in advance. Write or 'phone for details.—P.P.A., 15, Penrhyn Road, Kingston. Telephone 2501.

DOCTOR - SCHOOLMASTER (EX-PUBLIC School Resident Medical Officer and Master, and Preparatory School Housemaster and Doctor), has a SMALL Preparatory SCHOOL especially for DELICATE and BACKWARD BOYS on healthiest part of Kent Coast. Ages from 9–15 years (roughly). Ideal position on sea front, with large airy dormitories and sunny classrooms. Individual care and tuition. Good examination results. Preparation for Preparatory Schools, and Common Entrance Examination for Public Schools, etc. Large playing fields. All games. Resident trained Nurse specially experienced in Diabetic diets, tests, etc., as these cases are a specialty. Also experienced Matron.—Prospectus and all particulars from W. R. LEYCESTER DRAWBRIDGE, M.R.C.S., L.R.C.P., St. Alban's Preparatory School, Sea Road, Westgate-on-Sea, Thanet.

PATHOLOGICAL AND BACTERIOLOGICAL LABORATORY ASSISTANTS ASSOCIATION.—Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H. GOODING, Hon. Sec., "Moelfre," 10, Holbeck Grove, Victoria Park, Manchester. No fees.

"REFRACTION AND THE ORDERING OF GLASSES."—Practical work taught by practising London Ophthalmic Surgeon. £8 8s. for 10 lessons. — Address, No. 5348, B.M.A. House, Tavistock Square, W.C.1.

REQUIRED, WELL-QUALIFIED OPHTHALMIC SURGEON, holding hospital appointment to take over consulting rooms adjacent to Harley Street. A remunerative part-time appointment would be transferred to suitable applicant. — Address, No. 4753, B.M.A. House, Tavistock Square, W.C.1.

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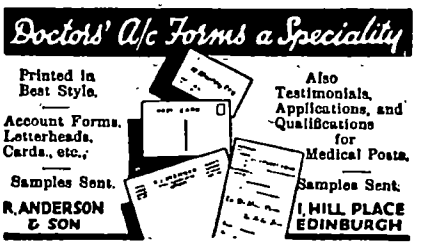

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APPOINTMENTS.—Contd.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, Broad Street, Holborn, London, W.C.2.

APPOINTMENT OF HOUSE SURGEONS.

Required for November 1st, for six months.
FIRST HOUSE SURGEON (Male). Salary at the rate of £140 per annum.
SECOND HOUSE SURGEON (Male). Salary at the rate of £120 per annum.
Both with board, residence, and laundry.

NOTE.—Candidates must be duly qualified Medical Practitioners, registered in this country and must have had experience in Ophthalmology. Applications, in which it should be stated whether the candidate is prepared to accept the Second House Surgeon appointment, accompanied by copies of testimonials, are to be sent to the Secretary on or before September 29th.

Intending candidates are requested to call upon the Staff of the Hospital, a list of whom can be obtained from the General Office.

SURREY COUNTY COUNCIL.

EPSOM COUNTY HOSPITAL.

RESIDENT ASSISTANT MEDICAL OFFICER.

Resident Assistant Medical Officer required at Epsom County Hospital.

There are 300 beds and the Hospital is a full training school for nurses, and work undertaken includes surgery, medicine, and midwifery. Applicants should have had experience as a House Surgeon or Physician.

The appointment will be for a period of six months in the first instance, and will be renewable for a further period of six months. Salary £250 per annum, plus board, lodging, and laundry.

Applications, stating age, qualifications, and experience, should be accompanied by copies of not more than three recent testimonials, and should be sent to the undermentioned not later than Tuesday, September 18th.

Envelopes should be endorsed Resident M.O.

County Hall, Kingston-upon-Thames. DUDLEY AUKLAND, Clerk to the Council.

September 4th, 1934.

CITY AND COUNTY OF BRISTOL.

HAM GREEN HOSPITAL AND SANATORIUM.

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICERS (Male and Female).

Applications are invited for the above appointments which are tenable for 12 months at a salary of £250 per annum. The Institution consists of 266 fever beds and 160 beds for all forms of tuberculosis. Candidates should have held a resident appointment in a general hospital for at least six months, and in the case of the Female Medical Officer should have gynaecological experience.

Applications, accompanied by copies of three recent testimonials, to be sent to the Medical Officer of Health, 40, Prince Street, Bristol, 1, not later than September 18th.

THE NOTTINGHAM HOSPITAL FOR WOMEN.

HOUSE SURGEON (Female or Male) required to commence duties on October 31st. Appointment for period of not less than six months. Salary at the rate of £150 per annum, with board, residence, and laundry. Previous hospital experience essential.

Applications, stating age, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the Secretary, Mr. A. L. MORELL, Burton Buildings, Parliament Street, Nottingham, not later than September 19th.

ST. MARY'S HOSPITALS, MANCHESTER.

TWO HOUSE SURGEONS for the WHITWORTH STREET WEST HOSPITAL (Maternity); and THREE for the WHITWORTH PARK HOSPITAL (two for the Gynaecological Department and one for the Children's Department), each for a period of six months from November 1st next. Salaries at the rate of £50 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned on or before September 13th.

R. RATCLIFFE, Secretary.

CONSUMPTION SANATORIA OF SCOTLAND, BRIDGE OF WEIR, near GLASGOW.

Wanted, ASSISTANT RESIDENT MEDICAL OFFICER to take charge of the male pavilion with 100 beds, and assist with the Colony of Mercy for Epileptics. Salary £200 to £250, with board, lodging, and laundry. Apply, giving full particulars regarding past experience, and stating when free, to the Medical Superintendent.

CHELMSFORD AND ESSEX HOSPITAL. (120 Beds.)

ONE HOUSE SURGEON (Male), single, required to commence October 1st for a period of six months. Salary £150 per annum, with board, apartments, and washing. Resident staff consists of two Resident Medical Officers. Applications, stating age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned not later than September 18th.

R. G. MORRISH, Secretary.

THE CHILDREN'S HOSPITAL, SUNDERLAND (70 Beds).

HOUSE SURGEON (Female) required on October 1st. Salary £140 per annum, with board, laundry, etc. Applications, stating age, qualifications, and accompanied by testimonials, to be sent to the undersigned immediately.

J. A. BEARDSALL,
House Governor & Secretary.

COUNTY COUNCIL OF MIDDLESEX.

NORTH MIDDLESEX COUNTY HOSPITAL.

JUNIOR RESIDENT ASSISTANT MEDICAL OFFICER.

The County Council invite applications for the above appointment. Candidates must be registered Medical Practitioners, and must have held resident appointments in a General Hospital.

The officer appointed will work under the control of the Medical Superintendent, and devote his whole time to his official duties.

Salary £250 per annum, together with board, lodging, and laundry.

The appointment, which is for a period of six months in the first instance, may be extended for an additional six months, and is subject to one month's notice on either side. At the expiration of one year's service, the successful candidate, if considered satisfactory in all respects, will be eligible, upon recommendation of the Medical Superintendent and subject to confirmation by the County Council, for promotion to the post of Assistant Medical Officer. If not so appointed, he will leave the Council's service.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than September 15th. Canvassing, directly or indirectly, will be a disqualification.

Special application forms are not provided. Envelopes must be endorsed "Junior Assistant Medical Officer."

N.B.—North Middlesex County Hospital is a modern General Hospital with accommodation for 1,000 cases, chiefly acute. (C.D./30.)

ERNEST S. W. HART,
Clerk of the County Council.

Middlesex Guildhall,
Westminster, S.W.1.
August 27th, 1934.

OXFORDSHIRE COUNTY COUNCIL.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from registered Medical Practitioners holding a diploma in Public Health or degree in State Medicine for the post of Assistant County Medical Officer of Health (age not to exceed 40 years). Applicants should have had experience in clinical tuberculosis and also in work under the Mental Deficiency Acts. The salary will be at the rate of £750 per annum, together with travelling expenses according to the County Council's scale and the appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922. The successful candidate will be required to pass a medical examination.

At a future date the officer appointed may be required to act as Medical Officer of Health for some of the District Councils within the County in accordance with the scheme under Section 58 L.G.A., 1929, and to be responsible under the County Medical Officer of Health for the administration of certain of the County Council's Health Services within the same area.

Forms of application can be obtained from the County Medical Officer, 9, New Road, Oxford, and should be completed and returned together with copies of three recent testimonials, to him at that address not later than September 22nd, and endorsed "Assistant Medical Officer of Health."

F. G. SCOTT,
Clerk to the County Council.

County Hall,
Oxford.
September 1st, 1934.

COUNTY BOROUGH OF BURNLEY.

DENTAL SURGEON.

Applications are invited from qualified Dental Surgeons (either sex) for the post of School Dental Surgeon. The duties will mainly include the inspection and treatment of school children, but the candidate appointed may be called upon to undertake Dental work in connection with other health services. The candidate appointed will be required to devote the whole of his or her time to the work of the Corporation, and will be under the supervision of the Medical Officer of Health. The salary will be £500 per annum, increasing, subject to satisfactory service, by annual increments of £25 to £700 per annum.

The successful candidate will be required to pass a medical examination by the Council's Medical Officer, and the appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

A copy of the conditions of service and application form may be obtained from the Medical Officer of Health, St. James' Street, Burnley, to whom applications, accompanied by copies of three recent testimonials, must be forwarded not later than Monday, September 24th.

Canvassing, directly or indirectly, will disqualify.

COLIN CAMPBELL,
Town Clerk.

Town Hall,
Burnley.
September 1st, 1934.

COUNTY COUNCIL OF WATERFORD.

APPOINTMENT OF TEMPORARY COUNTY MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

The Commissioner, exercising and performing the powers and duties of the County Council of Waterford and the Boards of Public Health and Public Assistance, hereby gives notice that, having regard to the urgent necessity for organising schemes in certain districts in the County of Waterford for the immunisation of children against diphtheria and in view of the desirability of initiating arrangements for the medical inspection of school children, he proposes at the Meeting to be held on September 25th, to appoint temporarily a duly qualified Medical Practitioner as County Medical Officer of Health and School Medical Officer, at a remuneration at the rate of £10 10s. per week, with vouched travelling expenses, subject to the sanction of the Minister for Local Government and Public Health. Candidates for the position must possess a registered Diploma in Public Health. Experience in School Medical Inspection is desirable.

Applications for the post are hereby invited, and should be addressed to the Secretary, County Council of Waterford, Dungarvan, so as to reach him not later than the hour of 12 o'clock, noon, on September 22nd.

J. H. O'SULLIVAN,
Secretary,
County Council of Waterford.

County Secretary's Office,
Dungarvan.
Sept. 1st, 1934.

CITY OF WAKEFIELD.

APPOINTMENT OF JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the post of Junior Assistant Medical Officer in the Public Health Department. Duties mainly in the School, and Maternity and Child Welfare Services.

Salary commencing £500 per annum, and rising by annual increments of £25 to a maximum of £700 per annum.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and the passing of a medical examination.

Applications must be made on forms obtainable from the Medical Officer of Health, Town Hall, Wakefield, from whom further particulars may be had, and, accompanied by copies of three recent testimonials, sent to me not later than September 20th.

T. NICHOLAS GRIMSHAW,
Town Clerk.

Town Hall,
Wakefield.
August 31st, 1934.

EAST LANCASHIRE TUBERCULOSIS COLONY, BARROWMORE HALL, GREAT BARROW, NEAR CHESTER.

(Under the direction of the British Red Cross Society and the Order of St. John of Jerusalem.)

HOUSE PHYSICIAN (male) required.

The appointment is for six months, and is renewable. Salary £100 per annum, with board, residence, and laundry.

The appointment is terminable by one month's notice.

The Institution deals with all stages of Pulmonary Tuberculosis, and comprises Hospital accommodation, sanatorium accommodation, extensive workshops for graduated work, and a settlement.

Applications, marked "House Physician," with copies of three testimonials, to be sent to the Medical Superintendent at the above address before September 18th.

THE WEIR HOSPITAL,

Grove Road, Balham, S.W.12.

SENIOR RESIDENT MEDICAL OFFICER required (male, unmarried) at once. Candidates must be fully qualified and duly registered. Salary £200 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, to be sent to the Secretary, from whom further information may be obtained.

WANTED, A HOUSE PHYSICIAN AT WYTON SANATORIUM, HUNTINGDON; approximately one hundred beds, mostly children. Would suit gentleman reading for higher examination. Appointment to commence on October 1st approximately and is for a period up to one year. Salary at the rate of £150 a year together with board, residence, and laundry. Apply to the undersigned.

C. B. MOSS-BLUNDELL, M.D., D.P.H.,
County Medical Officer.

Huntingdon.

THE ST. HELENS HOSPITAL.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male) to this Hospital at a salary of £150 per annum, plus board, residence, and laundry.

Early application to be sent to the Secretary, accompanied by three recent testimonials, not later than September 18th.

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DURHAM.—IN FLOURISHING NEIGHBOURhood.—Old-established industrial, and panel of about 930. Average £1,200. Premium 1½ years' purchase. Freehold house £850.—No. 9347.

EASTERN COUNTIES. — OLD-ESTABLISHED cash receipts over £3,000, large panel. Nice house and accommodation to rent on lease. Premium 2 years' purchase.—No. 9264.

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LONDON SUBURB, S.W.—ABOUT £400 P.A., increasing. Estab. but 3½ years. Panel not encouraged, but ample scope. Visits 5/- to 21/-. Prem. £200. House, 2 recep., 5 bed., to rent.—No. 9349.

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N. WALES TOWN. — OVER £1,100 P.A. No panel. Several appointments. Fees 5/- to 21/-. Prem. 2 yrs.' purchase. Good freehold house in own grounds with cottage.—No. 9348.

LONDON, W.2. — AVERAGE £757, PLUS transferable appointments £132. Non-dispg., no panel, but scope. Fees 5/- to 21/-. Suitable accommodation on inclusive rent. Prem. for practice and appts. £1,400.-No. 9343.

SOUTH WALES.—TOWN PRACTICE. MINING and agricultural. Average £1,840 p.a. Panel 1,350. Several appointments. 13-roomed house, 4 bedrooms, etc. Separate garage and garden.—No. 9339.

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WEST END.—Good-class, non-panel, non-dispensing PRACTICE. Attractive house to be rented on lease at £250 p.a. Receipts approximately £1,800 p.a. Fees 1 to 2 guineas. Premium 2 years' purchase.

LONDON, Eastern Suburb.—Middle-class G.P. Medium-sized house to rent on lease at the exceptionally low rental of £30 p.a. Receipts average £400 p.a. Panel 275. Appointments. Premium £650.

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LONDON, E.9.—Old-established cash and panel PRACTICE situated in thickly-populated locality. Semi-detached corner house with separate surgery. Receipts approx. £1,500 p.a. Panel nearly 950. Premium for Practice £2,500.

LONDON, S.E.19.—Well-established mixed G.P. situated in residential locality. Excellent detached house, in good position, to be rented at £110 p.a. Well-stocked garden. Receipts nearly £800 p.a. Panel 950. Premium £1,500, to include drugs and certain fittings.

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6. LANCS LARGE TOWN. — Old-established PRACTICE, receipts average £1,700 per annum, fair panel. Nice house, rent £100 p.a. on lease. Premium only £1,800.
7. Near NORTH WOOLWICH.—Well-established working-class PRACTICE. Receipts average £365 p.a., including panel close on 600. Rent £2 weekly. £400 accepted for immediate sale. Long lease.
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LANCS TOWN.—Old-established middle and working-class PRACTICE. Cash receipts last year £2,166. Panel 1,776. Scope. Good house (in own grounds), 3 reception, 4 bedrooms, separate surgery accommodation, large garage and garden. Rent £65 p.a. Premium 1½ years' purchase.—No. 604.

NEWCASTLE-ON-TYNE.—PARTNERSHIP in old-established panel and private Practice. Cash receipts over £2,000 p.a. Panel over 2,000. Scope for increase. Incoming Partner may choose own residence. Premium—half share—2 years' purchase.—No. 602.

LANCS TOWN.—PARTNERSHIP in sound mixed-class Practice. Cash receipts last year £3,680. Panel over 3,000. Good detached house, 2 reception, 4 bedrooms, garage, and garden. Rent £58 p.a. Premium—half share—2 years' purchase, to include half-share of valuable book debts, drugs, etc.—No. 603.

YORKSHIRE (North Riding). — PARTNERSHIP in estab. mixed-class Practice. Cash receipts last year over £2,000 p.a., including income from panel and appointments over £1,700. Scope for increase. Good roomy house available. Local Hospital. Premium — half share — 1½ years' purchase.—No. 601.

NR. MANCHESTER. — Middle-class PRACTICE in residential district. Cash receipts over £1,200 p.a. Small select panel. Good house, 3 reception, 6 bedrooms; garage and garden, to rent on lease. Premium 1½ years' purchase —No. 526.

NORTH-EAST COAST. — Very old-established middle and working-class PRACTICE. Cash receipts last year £1,388. Panel nearly 1,500. Scope. Good corner house, 2 reception, 5 bedrooms; garage and small garden. Rent £60 p.a. Premium, best offer.—No. 595.

NORTH WALES.—Outdoor ASSISTANT wanted with view to Partnership in large Practice in pleasant Country Town. Applicants must be well-qualified and experienced. Knowledge of Welsh language essential. Local Hospital. Salary £500 p.a.—No. A.30.

CO. DURHAM.—Old-established unopposed country PRACTICE. Cash receipts last year £877. Panel 573. Good house (with modern conveniences), 2 reception, 4 bedrooms; garage and large garden. Net rent £20 p.a. Vendor retiring. Premium 1½ years' purchase. —No. 593.

LIVERPOOL.—Old-established PRACTICE. Cash receipts £500 p.a. Panel 400. Scope. Good house, 2 reception, 5 bedrooms. Small garden. Rent £60 p.a. Premium £650.—No. 599.

MANCHESTER.—Old-established working-class PRACTICE. Cash receipts approx. £800 p.a. Panel and appointments £500 p.a. Scope. Good house, 2 reception, 3 bedrooms; garage. Rent £50 p.a. on lease. Good introduction. Vendor retiring. Premium, best offer.—No. 546.

LEICESTERSHIRE.—Old-established unopposed mixed PRACTICE in pretty country district. Cash receipts last year £828. Panel 800. Scope. Good house available. All kinds of sport. Premium 1½ years' purchase.—No. 596.

CUMBERLAND.—Old-established unopposed mixed PRACTICE in country district. Cash receipts over £400 p.a. Panel 300. Great scope for energetic man. Good house, 2 reception, 5 bedrooms; garage and garden. Rent £30 p.a. Vendor retiring. Premium, best offer.—No. 592.

CHESHIRE TOWN, nr. Manchester. — PARTNERSHIP in established middle and working-class Practice in pleasant district. Cash receipts last year £1,580. Panel 1,800. Appointments over £300 p.a. Great scope for increase. Local Hospital. Choice of two houses, with garden and garage. Premium—two-fifths share—2 years' purchase.—No. 597.

MEDICAL WOMAN'S PRACTICE in Large Seaport Town on the East Coast. Cash receipts last year £500. Panel 100. Scope. Good house, 2 reception, 3 bedrooms, professional rooms, and small garden. Premium—Practice—£600.—No. 563.

GLAMORGANSHIRE. — Small well-established PRACTICE taking £500 to £600 p.a., mainly panel. Good scope. Nice house, with large garden, to rent. Reason for sale, ill-health. Premium, best offer for quick sale.—No. 598.

MANCHESTER. — Old-established mixed-class PRACTICE, averaging over £837 p.a. Panel over 1,000. Scope. Good house, 4 bedrooms; garage and small garden, for sale or may be rented. Premium—1½ years' purchase.—No. 589.

SCOTLAND (NORTH).—Practically unopposed mixed PRACTICE. Cash receipts last year £1,013. Panel 414. Scope. Excellent house, 2 reception, 4 bedrooms, professional rooms; garage and garden. Price £800. Premium—Practice—£1,000.—No. 572.

NORTH WALES.—Small unopposed Country PRACTICE offering much scope. Cash receipts last year £372, including transferable appointment of £100 p.a. Panel 326. House, 3 bedrooms, garden, and garage, to rent at £25 p.a. Premium, best offer.—No. 600.

CHESHIRE TOWN, nr. Manchester.—Old-established mixed PRACTICE. Average cash receipts £2,000 p.a. Panel 1,750. Good house, 2 reception, 6 bedrooms, professional rooms, garage, and small garden for sale, or may be rented on lease. Premium—Practice—1½ years' purchase.—No. 566.

CO. DURHAM.—Old-established mixed PRACTICE. Average cash receipts £1,264 p.a. Panel 794. Excellent house in prominent position, 2 reception, 5 bedrooms, garage. Premium—Practice —1½ years' purchase.—No. 581.

LIVERPOOL.—PRACTICE capable of considerable expansion in developing suburb. Cash receipts last year approx. £600. Panel 660. Good house, 3 reception, 5 bedrooms; garage and good garden. Premium—Practice—1½ years' purchase.—No. 567.

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(FOUNDED 1880.)

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1 S. COAST.—OLD-ESTABLISHED MIDDLE AND BETTER-CLASS non-dispensing PRACTICE in Residential Town and Seaside Resort. Cash receipts average £3,255 p.a. No panel. Visiting fees 5/- to £1 1s. and £1 11s. 6d. Exceptionally fine house in one of the best parts, containing 7 bed and dressing rooms, etc. Garage and nice garden. Freehold would be sold or rented on lease. Good educational facilities. Premium two years' purchase.

2 S. COAST.—PARTNERSHIP IN OLD-ESTABLISHED PRACTICE about £2,500 p.a. in popular Seaside Resort. Panel 1,400. Visits 2/6 to 10/6. Good house (6 bed and dressing rooms) overlooking sea to rent on lease. Good educational facilities. Excellent golf and other sport. Premium three-eighths share two years' purchase.

3 S.W. OF ENGLAND.—GOOD MIDDLE-CLASS NON-DISPENSING PRACTICE in Seaside Resort. Cash receipts average nearly £750 p.a. No panel, but scope in this direction. Visits 3/6 to 14/6. Nice house (7 bed and dressing rooms) with electric light and hot water system for sale. Sport of all kinds. Plenty of good society and educational facilities. Hospital. Premium one and a half years' purchase.

4 N. CORNWALL.—PARTNERSHIP IN OLD-ESTABLISHED INcreasing Practice averaging over £1,750 p.a. in beautifully situated Market Town. Panel 1,100. Visits 5/- to £1 1s. Good house (4 bedrooms, bathroom, etc.), with garage and small garden to rent. Educational facilities and sport including hunting, fishing, etc. Premium one-half share two years' purchase.

5 HOME COUNTY. — PARTNERSHIP IN GOOD MIXED-CLASS Practice in Town about 35 miles from London. Cash receipts nearly £3,000 p.a., including about £1,000 from panel. Visits 2/6 to 10/6. Suitable house for sale or rent. Scope for increase. Premium one-third share £2,300.

6 CAPE PROVINCE. — WELL-ESTABLISHED PRACTICE IN small Town in one of the foremost Farming Districts (altitude over 5,300 ft.). Cash receipts year ending June 30, 1934, £1,100, including appointment worth £200. Visiting fees 7/6 in town by day, £1 1s. by night. Country at the rate of 4/- by day, 6/- by night. House contains spacious lounge, 2 bedrooms, bathroom, surgery, etc. Garden and good garage. Price about £1,475. Reasonable premium.

7 SOUTH COAST SEASIDE RESORT. — PARTNERSHIP (AFTER Preliminary Assistantship) in well-established Practice of about £2,800 p.a. in Residential Town. Panel 1,755. Visiting fees 4/6 to 15/-. Suitable accommodation could be obtained. One-third share (after Preliminary Assistantship) at two years' purchase. Cottage Hospital, and scope for Surgery, if desired.

8 SOUTH COAST. — PARTNERSHIP IN WELL-ESTABLISHED Practice of £2,600 p.a. in favourite Seaside Resort. Panel £444. Detached house (5 bedrooms) to rent on lease. Premium two-fifths share £2,350.

9 HOME COUNTIES.—PARTNERSHIP IN OPHTHALMIC PRACtice of £3,868 p.a. in Residential Town, under 10 miles from London. Premium for one-third share two years' purchase.

10 SOUTH COAST.—PARTNERSHIP IN OPHTHALMIC PRACTICE of about £3,500 p.a. in an important Town. Consultations £3 3s. Operations 15 to 100 gns. Premium for one-half share 2 years' purchase.

11 LONDON, N.W.—OLD-ESTABLISHED PRACTICE AVERAGING £800 p.a. in pleasant Suburb. Panel about 850. Semi-detached house (6 bedrooms) with good garden for sale. Scope for increase. Premium £1,500.

12 BRIXTON, S.W.—NUCLEUS OF PRACTICE. CASH RECEIPTS past eleven months about £400. Panel 60. Fees in surgery 2/6 to 7/6. Rent of well-furnished surgery £1 weekly. Premium £260 for quick sale.

13 LONDON, E.5.—WELL-ESTABLISHED PRACTICE £380 P.A. Panel 130. Visits 3/6, 5/- (night 10/6). Shop-fronted surgery and flat to let. Premium £350.

14 LONDON, N.W. — OLD-ESTABLISHED PRACTICE IN GOOD residential neighbourhood. Receipts average £1,460 p.a. Panel 1,500. Visits from 3/6 to 5/-. Excellent detached corner residence (7 bed and dressing rooms), with garage and garden for sale. Scope. Premium £3,000.

15 S. OF ENGLAND. — PARTNERSHIP (AFTER PRELIMINARY Assistantship) in old-established Practice in growing district on outskirts of a delightfully situated Country Town. Suitable accommodation can be rented. Applicant should be aged 28-35 with some experience. After Preliminary Assistantship a share worth £700 would be sold at two years' purchase. Good hospital and educational facilities.

16 BIRMINGHAM.—OLD-ESTABLISHED PRACTICE AVERAGING £650 p.a. in suburban district. Panel about 800. Visits 2/6 to 7/6, medicine not included. Substantially built house (7 bed and dressing rooms) occupying prominent corner position with garage and small garden for sale. Considerable scope as district is growing. Premium £1,300.

17 LONDON, W.—PARTNERSHIP IN WELL-ESTABLISHED PRACtice between £1,100—£1,200 p.a. in residential area easy reach of West End. Incoming Partner should be aged 30-35. Great scope for panel work. One-half share (£500 p.a. guaranteed) would be sold for £1,000.

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Practices and Partnerships for Disposal (continued).

18 SOUTH COAST. — PARTNERSHIP (AFTER PRELIMINARY Assistantship) in old-established Practice of £3,300 p.a. in favourite Seaside Resort. Panel about 2,000. Visits 3/6 to 10/6, some higher. Suitable house available. Applicant should be 25 to 30 years of age, interested in medicine, have held Resident Hospital appointments, and able to give Anaesthetics. One-third share (after Preliminary Assistantship) at two years' purchase.

19 SURREY.—INCREASING PRACTICE IN DEVELOPING RESIdential District. Income about £530 p.a., including small panel returning £80 p.a. Visits 5/- to 7/6. Very good freehold residence for sale. Great scope for increase. Premium £500.

20 SURREY.—PARTNERSHIP IN SOUND OLD-ESTABLISHED good mixed-class Practice of £2,600 p.a. within 10 miles of London. Several appointments and Panel 325. Visits 5/- upwards. Few 3/6. Very little midwifery. Good corner house (5 bedrooms) with nice garden for sale. Scope for considerable increase. Premium one-half share 2 years' purchase.

21 LONDON, S.E.—WELL-ESTABLISHED PRACTICE OF £1,037 p.a. in growing residential suburban district. Panel over 560. Visits 4/-, 7/6, and upwards. Excellent detached house (4 bedrooms) with garage and half acre of garden to rent. Scope for increase. Premium 2 years' purchase.

22 HOME COUNTIES. — PARTNERSHIP IN OLD-ESTABLISHED PRACTICE in most desirable Residential Country Town easy distance of London. Cash receipts average about £4,000 p.a. including good appointments and panel of about 2,500. Visits 3/6 to 10/6 and up to 15/-. Detached house (5 or 6 bedrooms) with garage and fair-sized garden for sale or rent. Good hospital in town. Incoming partner should be 28-30 years of age and have held h.p. appointment. Premium one-third share 2 years' purchase.

23 S.W. OF ENGLAND.—PRACTICE CARRIED ON BY MEDICAL woman in coast town. Receipts average about £350 p.a. including appointments and small panel. Visiting fees 5/- to 7/-. Suitable house available. Premium £350.

24 COUNTY TOWN ABOUT 130 MILES FROM LONDON.—VERY old-established middle and upper-class PRACTICE averaging nearly £1,200 p.a. Panel 120. Visiting fees 7/6 to 15/6. Ten-roomed house in good residential part with garage and garden for sale. Scope. Premium £1,750.

25 S.W. OF ENGLAND.—NON-DISPENSING PRACTICE OF £1,965 p.a. in beautifully situated and growing Summer Resort. No panel or appointments. Visits and consultations 7/6, 10/6, and £1 1s. Practically no night work. Modern house (6 bedrooms) pleasantly situated in quiet locality, with one acre garden, for sale. Premium 1¾ years' purchase.

26 BIRMINGHAM. — MIXED PRACTICE OF £3,350 P.A. IN rapidly growing suburb. Panel about 1,800. Very nice detached modern residence (5 bedrooms) with garage and small well-kept garden. Excellent scope for increase. Premium 1¾ years' purchase.

27 MEDITERRANEAN TOWN.—OLD-ESTABLISHED GOOD-CLASS non-dispensing PRACTICE averaging over £2,000 p.a. Fees chiefly £1 1s. Charmingly situated Flat for sale. Premium—Practice—one year's purchase.

28 LONDON, S.E.—PRACTICE ABOUT £350 P.A., WITHIN 5 miles of Charing Cross. Panel 320. House contains waiting room, surgery, dispensary, 2 bedrooms, etc., rent £63 p.a. Premium £500, or offer.

29 LONDON, E.—SMALL PRACTICE IN POPULOUS AREA; CASH receipts past year £425. Panel 351. Accommodation comprises 4 rooms, kitchen, bathroom, and is rented on lease. Premium 1½ years' purchase.

30 BOURNEMOUTH.—DETACHED CORNER RESIDENCE BUILT by Medical Man and from which general practice has been carried on. The accommodation comprises 2 reception rooms, waiting and consulting rooms, 4 bedrooms, etc. Garage and garden. The freehold would be sold for £1,750. Active building is going on in the district, and there is a good opening.

31 LONDON, N.W. — OLD-ESTABLISHED GOOD MIDDLE-CLASS PRACTICE averaging £627 p.a. in first-rate Residential District. Small panel. Visits 5/-, 7/6 (majority), 10/6, and 21/-. Very little dispensing. Practically no midwifery. Semi-detached house (5 bedrooms) with beautiful garden of quarter of an acre to rent. Premium one and a half years' purchase.

32 SURREY AND HAMPSHIRE BORDER. — OLD-ESTABLISHED PRACTICE over £1,200 p.a. in Residential District. Panel 750. Visits 3/6 to 21/-. Good house (about 5 bedrooms), with electric light, gas, and company's water. Garage and very good garden for sale. Excellent golf. Good society. Premium one and a half years' purchase.

33 CORNISH COAST.—SMALL PRACTICE IN DELIGHTFUL SEAside town worth about £250. No dispensing or panel. House, 3 bedrooms, electric light, gas, and walled-in garden to rent. Premium £250.

34 ESSEX. — NUCLEUS OF PRACTICE WORTH ABOUT £175 p.a., capable of good increase, in populous district. Panel 257. House (4 bedrooms) in main thoroughfare, with garden, for sale or rent. District rapidly growing. Premium £200, to include drugs and part of Surgery furniture.

35 NORTHAMPTONSHIRE. — PARTNERSHIP IN OLD-ESTABlished and increasing Practice averaging £1,718 p.a., in small town. Panel 1,950. Good scope for young energetic man. Premium for one-half share two years' purchase.

36 HOME COUNTY. — PARTNERSHIP IN SOUND OLD-ESTABlished, about £6,500 p.a. in beautifully situated first-rate Country Town. House available which might be obtained on lease. Considerable scope for increase. Incoming Partner should be aged about 30, preferably married, and a physician with some knowledge of Pathology. Commencing share of (approximately) £1,170 p.a. would be sold at two years' purchase.

37 S. MIDLANDS. — PARTNERSHIP IN WELL-ESTABLISHED Practice of nearly £2,400 p.a. in growing Country Town within 40 miles of London. Panel 1,300. Visits 5/6 to 7/6. Suitable house obtainable. Considerable scope for increase. Premium two-fifths share two years' purchase.

38 HERTS. — SMALL PRACTICE IN GROWING COUNTRY District. Income little over £200 p.a. with small panel. Nice freehold corner house (4 bedrooms), garden back and front, for sale. Very good prospects for energetic man. Premium £330.

39 W. OF ENGLAND. — OLD-ESTABLISHED PRACTICE IN County Town. Receipts average over £1,050 p.a., including appointment and clubs worth about £250 p.a. No panel, but Practice might be considerably increased in this direction. Visiting fees 5/- to 10/6 and £1 1s. Pleasantly situated corner residence (8 bedrooms) with garage and fair-sized garden for sale. Very good educational facilities. Building progressing. Premium two years' purchase.

40 INLAND WATERING PLACE AND HEALTH RESORT.—WELLestablished non-dispensing PRACTICE. Receipts last three years averaged about £835 p.a., including a select panel of 280. Fees 5/- to £1 1s. Particularly attractive house with large garden, for sale. Scope. Premium £750.

41 N.W. COAST. — OLD-ESTABLISHED PRACTICE IN RESIdential Town. Cash receipts average about £655 p.a., including good appointments worth about £250. Well-situated house for sale. Good educational facilities for both boys and girls. Premium £850.

42 NORTHANTS.—PARTNERSHIP IN WELL-ESTABLISHED PRACtice of about £1,400 p.a. in a rapidly growing residential district. Panel over 1,600. Excellent chance for young energetic man. Premium one-third share, £800.

43 NUCLEUS OF PRACTICE IN A PLEASANT EASTERN suburb. No midwifery. Modern house (5 bedrooms) in good residential part. With electric light and heating and nice garden for sale or rent. Scope for increase.

44 LONDON, S.W.—WELL-ESTABLISHED OPHTHALMIC PRACTICE averaging £900 p.a. in Suburban District. Fee for consultation and examination £1 1s. Well-situated house to be sold or let. Premium £1,200.

45 GLOUCESTERSHIRE.—PARTNERSHIP IN VERY OLD-ESTABlished Practice of nearly £1,750 p.a. in small town in beautiful part of the country. Panel over 1,350. Fees average 7/6. Premium one-half share 2 years' purchase.

46 SUFFOLK AND NORFOLK BORDERS.—PRACTICE. NEARLY £350 in Market Town. Panel 106. Nice house (6 bedrooms), garage, and good-sized garden. Price of freehold £850. Excellent schools. Plenty of sport. Cottage Hospital. Premium £450.

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Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges. No charge is made to Principals for the introduction of Locum Tenens or Assistants.

1. EASTERN COUNTIES.—COAST TOWN.—Good-class, non-dispensing, non-panel PRACTICE, held by Vendor (who is retiring) for the past 14 years, situated in very attractive residential town with Cottage Hospital. Average gross cash receipts for last 3 years £1,129. Fees 3/6 to 21/-. No midwifery. Suitable house, with 2 reception, 6 bedrooms, etc., consulting room. Electric light. Garage. Small garden. Can be rented on lease at £80 p.a. Excellent sport and good schools. Premium £1,500.
2. LANCS.—LARGE TOWN.—Old-established good middle and working-class PRACTICE offering large scope for increase. Gross cash receipts for past 12 months £1,040. Panel of 240. Fees from 4/-. Suitable house, with 3 reception, 6 bedrooms, etc., good professional accommodation. Garage. Garden. Rent on lease £100 p.a. Premium £1,800, or near offer.
3. LONDON, S.W.—Well-established middle and working-class PRACTICE producing for last 12 months £1,188. Panel of 2,000 and appointment worth £160 p.a. Visits 3/6 to 5/-. Suitable house, with 4 bedrooms, professional accommodation, etc. Price for leasehold £1,300. Premium £2,750.
4. MIDDLESEX.—OUTLYING SUBURB.—Recently established PRACTICE producing for last 12 months £600 and offering unlimited scope for increase. Panel of 250. Suitable house, with 6 bedrooms, etc. Price for freehold £1,800, £1,460 on mortgage. Premium £900.
5. LONDON, W.—Recently established PRACTICE producing at the rate of £250 p.a. Panel of 100 to 150 (increasing). Suitable house with garden. Can be rented at £90 p.a. Premium £200.
6. HOME COUNTIES.—PARTNERSHIP.—A one-half share is offered in a very old-established good mixed-class Practice, producing for the last 12 months approximately £4,000. Panel of 1,950. Appointments worth over £200 p.a. Visits 3/6 to 1½ gns. Very nice house, containing 3 reception, 7 bedrooms, etc., consulting room, surgery, and dispensary. Separate entrance. Large garden, with tennis lawn. Electric light. Garage. Can be rented on lease. Sport of all kinds, and very good schools. Premium for share £4,050. Ingoing partner must be over 35 years of age, married and preferably English.
7. MIDDLESEX.—OUTLYING SUBURB NEAR BORDERS OF HERTS.—A one-third share is offered, owing to the retirement of one of two Partners in an old-established very sound good middle and working-class Practice offering exceptional prospects of increase. Gross cash receipts for the immediate past 12 months £3,250. Panel of about 1,600. Visits from 3/6. Midwifery from 3 gns., about 20 to 30 cases yearly. Suitable house, with 2 reception, 4 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £1,250, £250 down and balance by arrangement. Ingoing partner will reside in new and rapidly developing district where extensive building operations are in progress. Premium £2,600.
8. YORKS.—HOSPITAL TOWN.—PRACTICE is a well-established middle and working-class one situated in a good town of about 30,000 inhabitants. Average gross cash receipts for the past 12 months £1,755. Panel of 1,076. Appointments worth £150 p.a. Advice and medicine 3/6, visits 3/6 to 10/-, with medicine extra. Midwifery from 3 gns. House is a good one, well situated, containing 2 sitting rooms, 4 bedrooms, etc. Garden of 1 acre. Greenhouse. Price for freehold (to include branch surgery) £2,000, of which £1,200 can remain on mortgage. Vendor on staff of hospital. Experience in major surgery an advantage, but not essential. Premium £3,100.
9. PARTNERSHIP IN CITY PRACTICE.—NON-RESIDENTIAL.—A one-half share is offered in a very sound old-established Practice having large scope for increase. Gross cash receipts for immediate past 12 months approximately £1,740. Panel produces £150 p.a., and appointments produce about £300 p.a. Visits from 3/6. Premium for share 2 years' purchase.
10. NEW ZEALAND.—NORTH ISLAND.—Well-established general Practice situated in a thickly populated and prosperous dairy farming district, bringing in over £2,200 p.a. Minimum fee 10/6, plus mileage charged at the rate of 5/- a mile after 2 miles one way. Average midwifery fee 6 gns. There is a private hospital with 9 beds. Purchaser must be able to do major surgery as surgery forms a considerable part of the work. Fees charged at the rate of usual B.M.A. standard. Very good bungalow house with beautiful garden of about an acre, containing dining and drawing rooms, 2 bedrooms, sleeping porch, bathroom, etc., kitchen, scullery. Premium £2,000, to include both practice and house, drugs, fittings, etc., and diathermy apparatus.
11. LANCS.—LARGE TOWN.—Good-class private and panel PRACTICE established over 60 years and held by Vendor for past 7 years. Gross cash receipts for the immediate past 12 months £3,000. Panel of 1,800. Visits 2/6 upwards, with medicine extra. Midwifery from 3 gns., about 40 cases yearly. Expenses are moderate. Very good house, in best position in the town, containing 2 reception, 5 bedrooms, etc., and good professional accommodation. Can be rented at £100 p.a. Good schools and sport of all kinds.
12. KENT.—WITHIN EASY REACH OF CHARING CROSS. — Rapidly increasing middle and better working-class PRACTICE offering exceptional scope for increase. Gross cash receipts for immediate past 12 months are estimated to be approximately £2,000. Panel of 900. Fees from 2/6 to 7/6. Suitable house can be rented at £30 p.a. Premium 1½ years' purchase.
13. NORTH-EAST COAST.—FAVOURITE SEASIDE RESORT.—Well-established mixed-class PRACTICE producing approximately £1,600 p.a. Panel brings in with mileage about £300 p.a., and appointment worth £100 p.a. Fees 3/6 to 7/6. Good house with 5 bedrooms, etc. Garden and garage. Price for freehold £2,250. Sport of all kinds. Good schools. Premium 1½ years' purchase.
14. LONDON, NORTH-WEST. — OUTLYING RESIDENTIAL SUBURB.—Rapidly increasing PRACTICE established 2 years and offering excellent scope as Estate is being largely expanded and the opposition is slight. Gross cash receipts for year ending March 31st last £265. Panel of 265, and Public Medical Service 108. Practice has been worked as a branch by Vendor for only about 2 hours daily, who now requires to devote his whole attention to the main Practice. Suitable house, containing 2 reception, 3 bedrooms, etc., on rental. Premium £350.
15. EAST LONDON. — Recently established working-class PRACTICE estimated to be bringing in approximately £380 p.a. Panel of 130. Suitable shop-fronted premises can be rented at reasonable figure and expenses very low. Premium £350.
16. LONDON, N.W.—Good middle and working-class PRACTICE established 43 years and held by Vendor (who is retiring) for past 40 years. Average gross cash receipts for last 3 years £1,460. Panel of 1,500. Visits 3/6 upwards. Midwifery 3 gns. upwards, about 12 cases yearly. Very good freehold house on 3 floors containing 3 large reception rooms, 6 bedrooms, etc., and professional rooms. Garage. Good garden. Premium for Practice and house £7,000.
17. LANCS.—Middle and working-class PRACTICE situated within about 10 miles of Manchester. Gross cash receipts average approximately £925 p.a. including panel of 1,000. Visits and medicine 4/- upwards. Well-situated house held on lease at rental of £75 p.a. Premium 1½ years' purchase, or nearest offer.
18. CITY PRACTICE. — Very old-established PRACTICE worked as a "lock-up" and held by the Vendor (who is giving up owing to ill-health) for the past five years. Average gross cash receipts for last 3 years £907. Fees 10/6 and 21/-. Suitable surgery premises can be rented on lease. Premium £700.
19. DEATH VACANCY.—LONDON, EAST.—Very old-established mixed general Practice, non-panel, and offering scope for increase. Gross cash receipts for the last twelve months approximately £600, but previously over £1,000 p.a. Fees from 2/6, visits from 5/-. Appointments consist of two Clinics, which might be transferred, the receipts from which are not included. House is in main road, contains 2 reception, 3 bedrooms, 2 attics, etc. Freehold can be purchased, or can be rented at £100 p.a. Premium £400.
20. LIVERPOOL. — Well-established mixed-class PRACTICE, in rapidly increasing area, and having good scope for further development. Gross cash receipts over £600 p.a., including panel of 682, and clubs worth about £150 p.a. Compact house, in first-class order, containing 3 reception, 5 bedrooms, etc. Garage. Electric light. Well-stocked garden. Price for freehold £1,250, £200 down and balance on mortgage. Premium £900.
21. HANTS.—PARTNERSHIP. — A two-eighths share, producing about £800 p.a., is offered in a very good mixed-class Practice in very attractive residential district. Average gross cash receipts £3,200 p.a. Panel of about 1,800. Suitable house available. Premium for share two years' purchase.
22. OPHTHALMIC AND GENERAL PRACTICE SITUATED IN GOOD RESIDENTIAL LONDON DISTRICT.—Very old-established and held by the Vendor for last 13 years. Average gross cash receipts for past 3 years £900. Selected panel of 513, and appointments worth £30 p.a. Patients are good class and no bad debts. Fees for general work 10/6, and for ophthalmic work 1½ and 2 gns. Good scope for private practice, and particularly for acquiring a larger panel if wished. Suitable house, with dining and drawing room, consulting room, 3 bedrooms, bathroom, kitchen, etc. Electric light and garden. Basement sublet. Rent on lease, inclusive of rates and taxes £185 p.a. Premium £1,800. Vendor retiring.
23. LONDON, EAST.—Middle and working-class PRACTICE, producing about £900 p.a. including panel of 520. Fees 2/6 upwards. Suitable house can be rented at £100 p.a. Premium 1½ years' purchase.
24. MIDLANDS COUNTY TOWN.—Old-established good middle and working-class PRACTICE held by the Vendor, who is retiring, for the past 20 years. There is good scope for increase. Average gross cash receipts for past 3 years nearly £2,200. Panel of 2,400 and P.M.S. over £200 p.a. Fees 3/6 to 1 guinea. Very little midwifery. Suitable house, with 2 reception, 5 bedrooms, etc., and professional rooms. Electric light. Small garden. Price (freehold) £2,000. Premium 2 years' purchase.
25. EGYPT.—Well-established PRACTICE producing about £800 p.a. and offering scope for increase. Fees 10/6 to 2 gns. Excellent accommodation can be had at £10 per month. Premium to include all furniture, drugs, drug bottles, instruments, etc., £1,000. Interview in London can be arranged.

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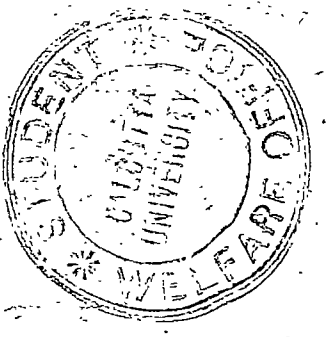

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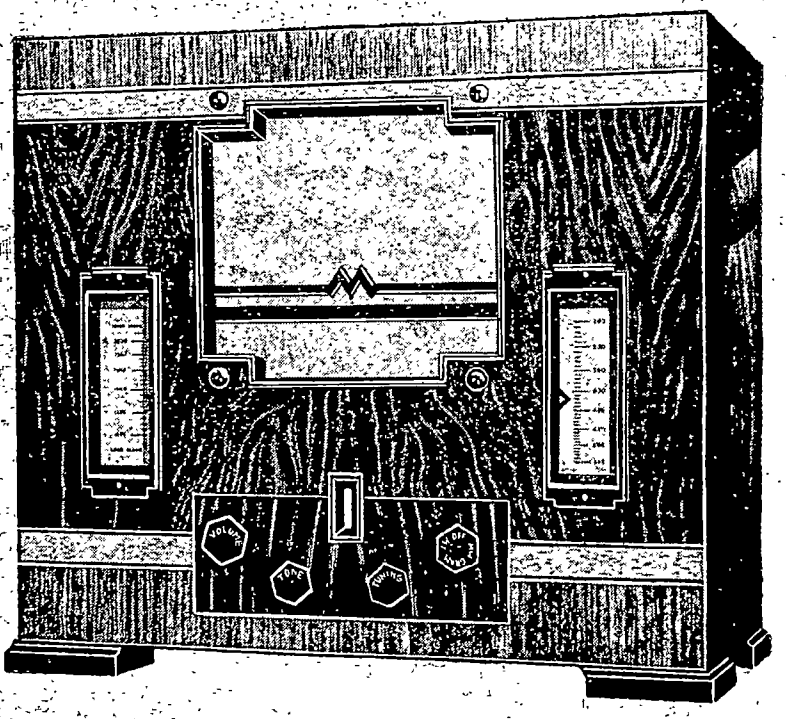

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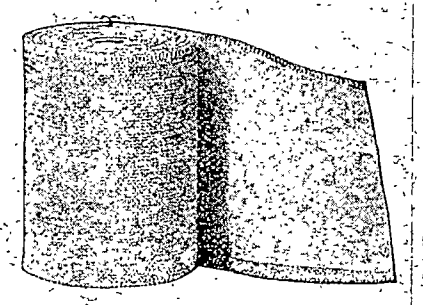

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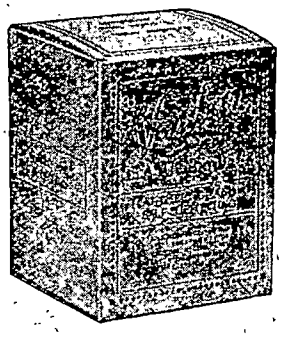

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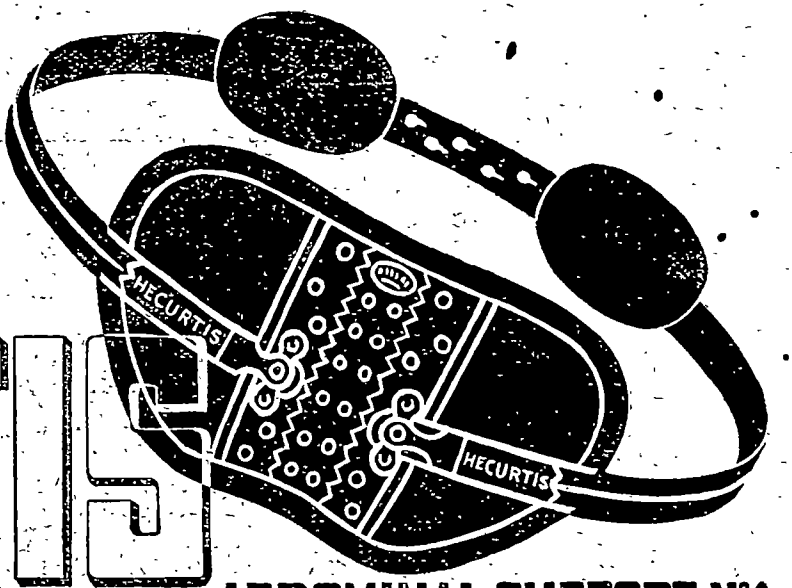

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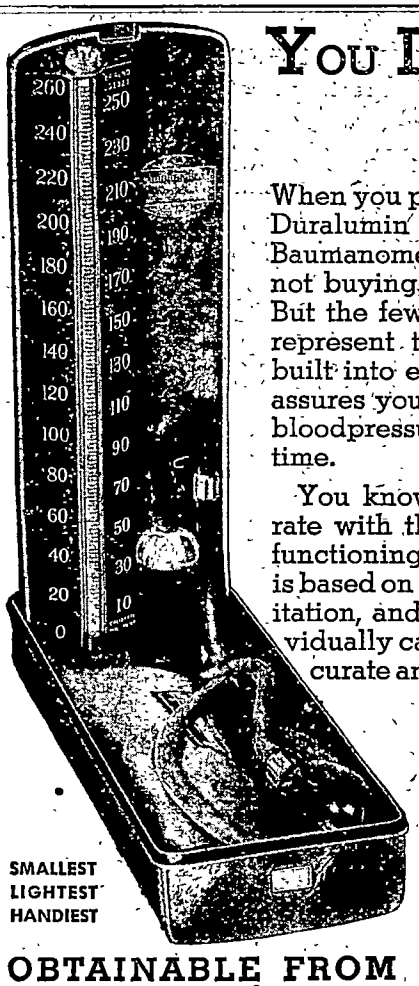

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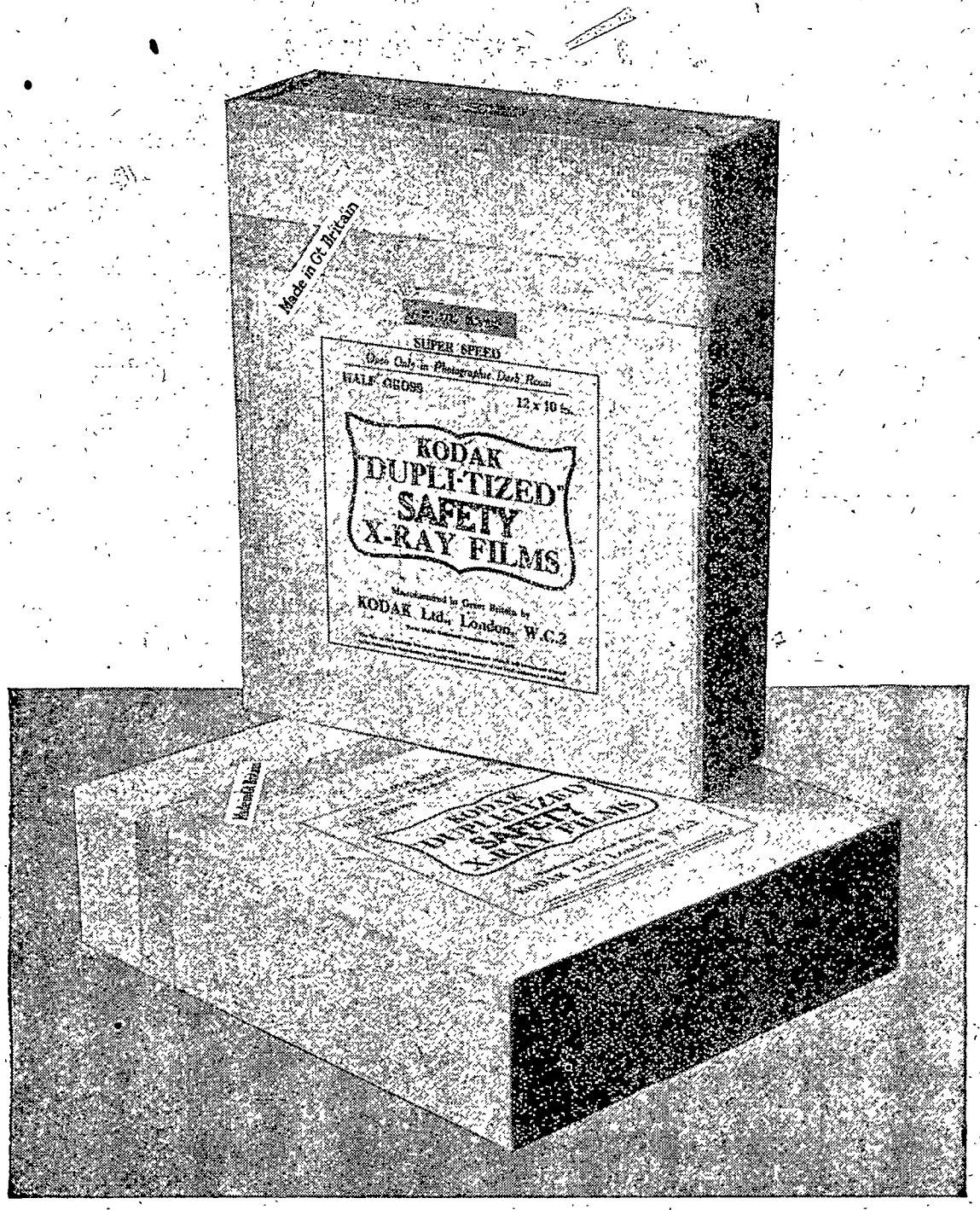

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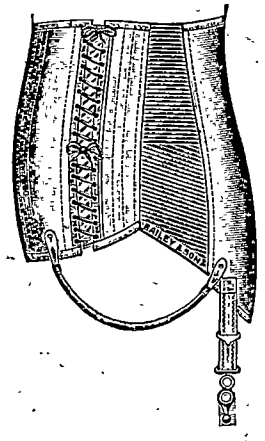

Fig. B690

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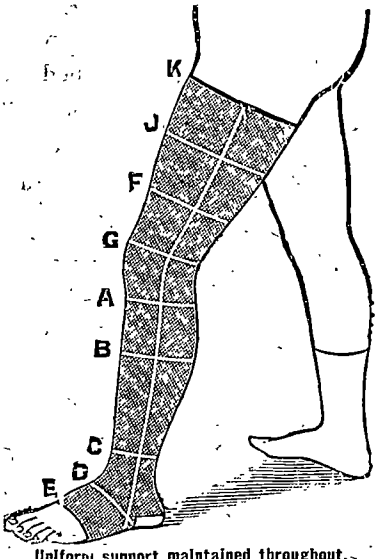

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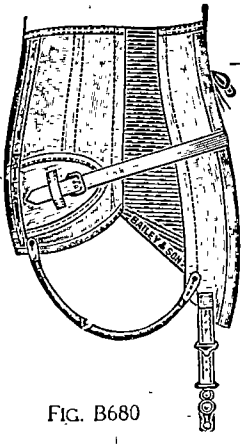

FIG. B680

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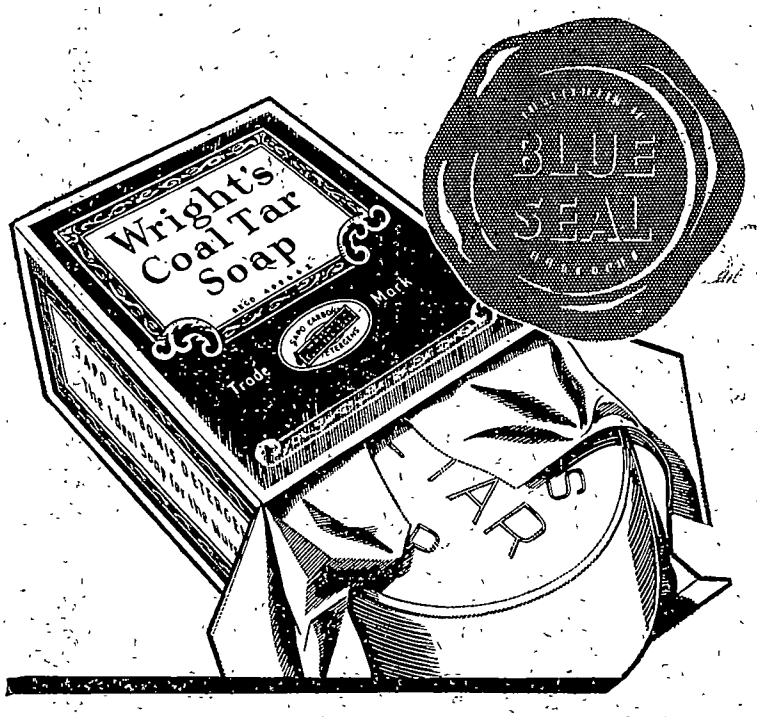

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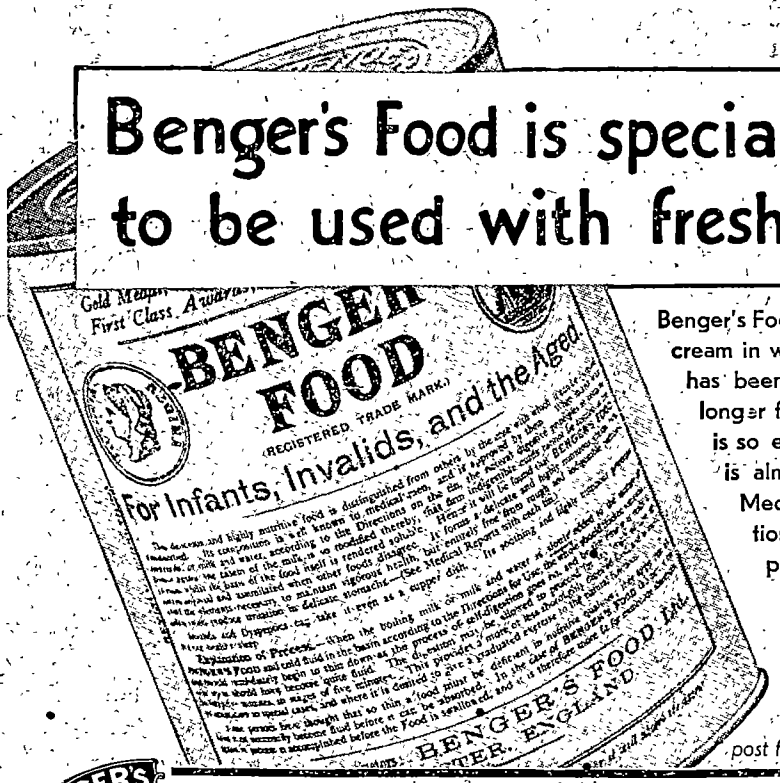

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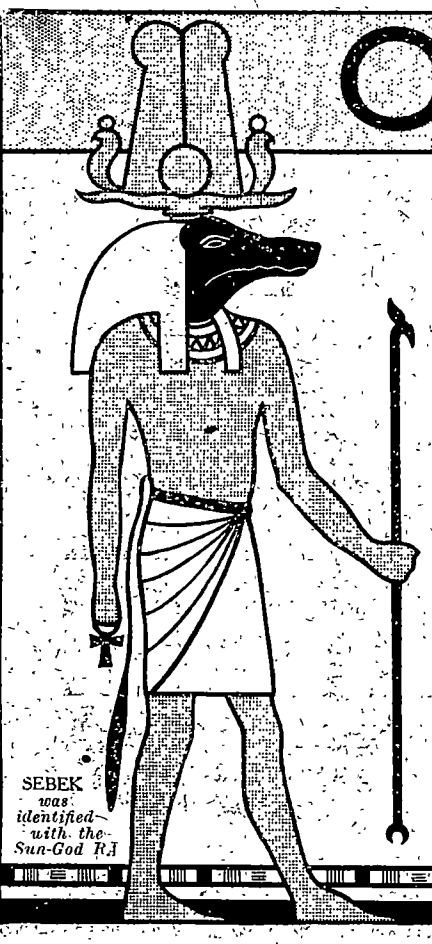

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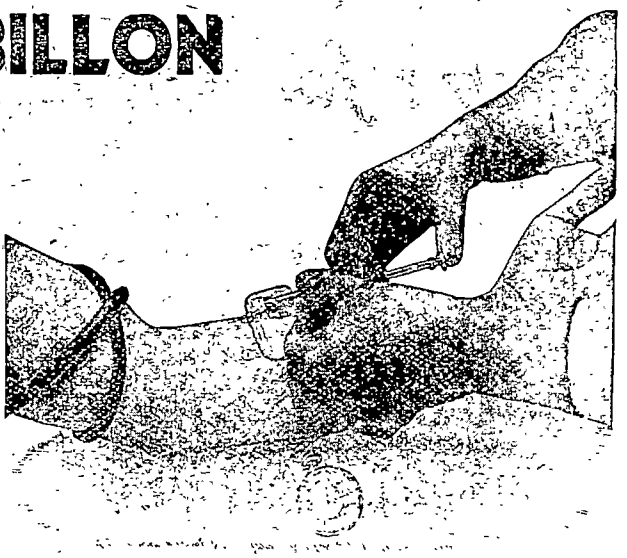

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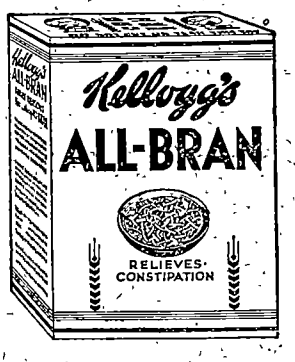

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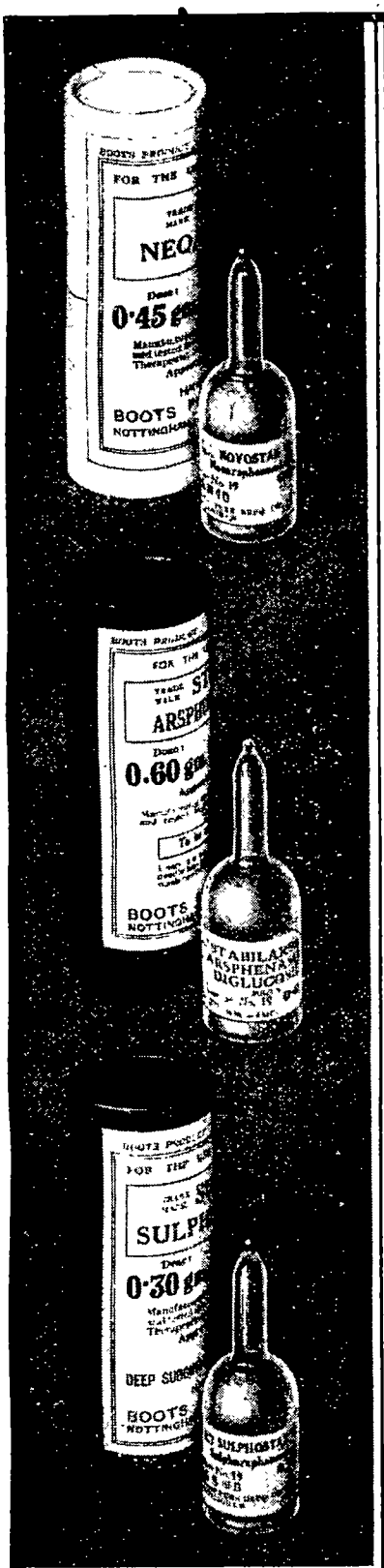

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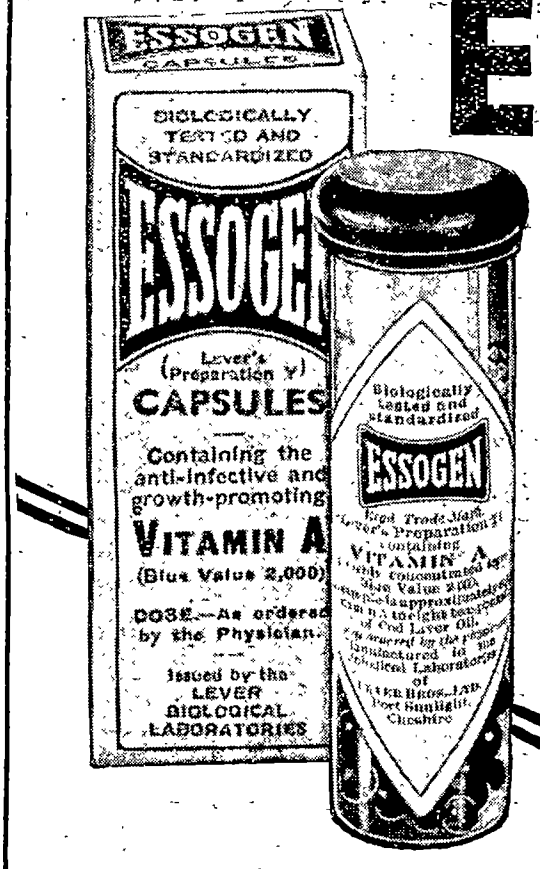

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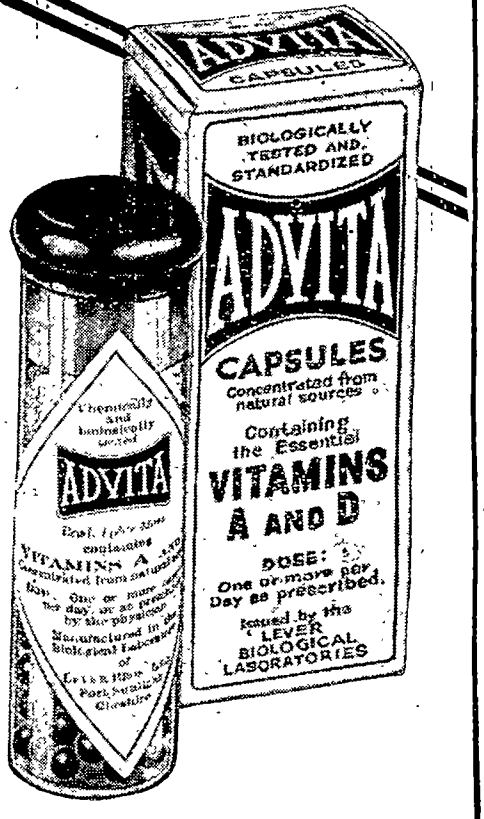

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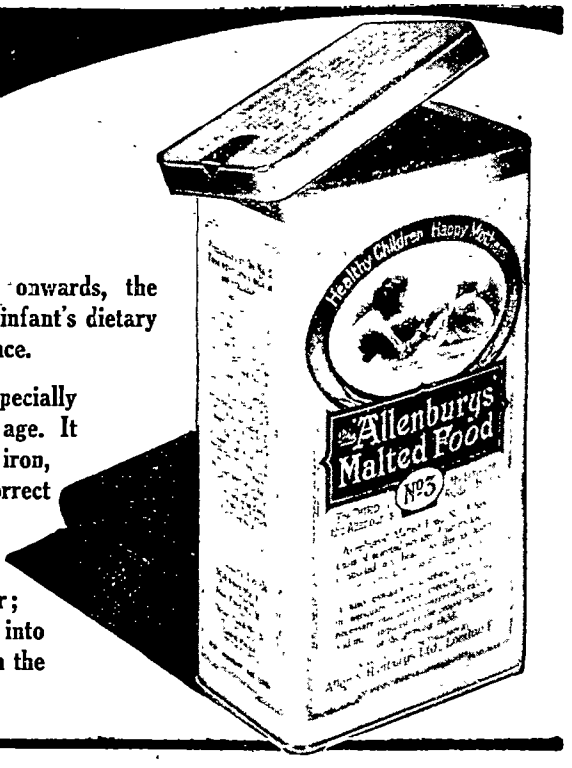

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BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, SEPTEMBER 15th, 1934

DIFFERENTIAL DIAGNOSIS OF FUNCTIONAL AND ORGANIC NERVOUS DISORDERS*

BY

GEORGE RIDDOCH, M.D., F.R.C.P.

PHYSICIAN WITH CHARGE OF OUT-PATIENTS, LONDON HOSPITAL, AND NATIONAL HOSPITAL, QUEEN SQUARE

It would be well at the outset of the discussion to define the terms "functional" and "organic." Strictly speaking, all symptoms of illness are, of course, functional, in that they are manifestations of disordered function; but here I propose to use the word in a narrower sense as indicating those symptoms which are psychogenic. By "organic" will be meant symptoms which result from abnormal physical alterations in the nervous system. The word "abnormal" is advisedly used, for all forms of activity of the nervous system must be associated with physical changes. These morbid alterations may be so gross that they can easily be detected by the pathologist, and have long been recognized. Others are less obvious, and, like those in the basal ganglia in paralysis agitans, have only come to light in recent years through the development of histological technique. There is still another group of cases in which the symptom is believed to be organic, although structural changes may or may not be found post mortem; this group is largely composed of disorders of function which are transient and recurrent. During the attacks there may be present signs which are accepted as of organic significance—for example, in epilepsy, loss of consciousness, abolition of tendon reflexes, or extensor plantar responses—while in others, such as narcolepsy, there may be no physical signs of this order.

It is therefore clear that, although the pathologist has done much in the differentiation of organic from functional nervous disorders, the main burden has rested on the clinician, and still does. By the sifting of accumulated experience gained at the bedside, through careful investigation of the natural history of disorders, the characteristics of individual symptoms, and the searching for physical signs, he has led the way in differential diagnosis. The physical signs of organic disease are often crude and are comparatively few, but they are gradually becoming more refined and are increasing in number. But it is not only on the elicitation of physical signs that the physician ought to depend for differential diagnosis. Symptoms, including the patient's own sensations, have for long been taken seriously by the clinician, and will, in the future, yield information of the greatest value, for frequently they indicate the earliest stages of disordered function before structural changes develop of sufficient severity to give rise to physical signs. This leads up to the importance of careful history-taking, the methodical investigation of symptoms, and their temporal relationships. An adequate history should, of course, include an account of the patient's past illnesses and his habits, and of the health of his family. One should, in addition, attempt to get some idea of the main psychological influences that have affected him, particularly if diagnosis is uncertain. In other words, a proper medical history is one which recapitulates the life of the patient as a whole, of which his present illness forms but a part. "Disease" is a vital process with a natural history, and symptoms are not a series of isolated events.

Clinical Criteria of Differential Diagnosis

What, then, are the indications which have been proven to be of use in the separation of functional and organic nervous illnesses? The psychological aspect of the problem will be dealt with by Dr. Petrie, but let me say that the history of a psychoneurotic almost always shows a tendency, from childhood onwards, to face trouble badly. In the past, he may have been able to carry on with his work, and may not have broken down before; nevertheless, emotional disturbances have produced symptoms of a psychogenic kind. In fact, to borrow a definition, a neurotic is a person who is unable to strike a sensible bargain with existence. Dr. T. A. Ross, as the result of his great experience, stresses this point by saying that in an obscure case the diagnosis of a psychoneurosis should not be made in the absence of a psychogenic history. It may be argued, with justice, that every individual has his breaking-point, and that an anxiety, resulting from a threat to himself or to those to whom he is deeply attached, may precipitate a mental illness. But it is questionable whether the illness would persist for long if the individual possessed an average capacity for adaptation as shown by his behaviour in the past. If the present illness was not preceded by emotional strain, and if the past history shows that the ill person had passed through experiences distressing to him, and yet was able to adjust himself to them in an adequate manner, the symptoms which now trouble him, however much they may resemble those of a psychoneurosis, should not readily be accepted as such.

For example, sleeplessness at night with or without lethargy during the day is now a well-recognized symptom of lesions of the hypothalamus from various causes, and, when due to encephalitis lethargica, is often, especially in children, associated with irritability, tearfulness, and fear. Fatigability, a common complaint in neurotic persons, may also be an organic manifestation, as in Parkinsonism and myasthenia gravis. Certain headaches—for instance, those of intracranial hypertension—pains in the trunk and limbs as in tabes or polyneuritis, and the paraesthesia in subacute combined degeneration, are of the same order, but a careful analysis of such symptoms in the process of history-taking and a knowledge of features

* Read in opening a discussion in the Section of Neurology, Psychological Medicine, and Mental Diseases at the Annual Meeting of the British Medical Association, Bournemouth, 1934.

of organic significance should prevent many mistakes in diagnosis.

A single symptom such as sudden diplopia or misty vision in one eye, which persists for a few weeks, ought, especially in a young adult, to make one suspect organic disease. This suspicion becomes almost a certainty that one is dealing with a case of disseminated sclerosis if, as the story is unfolded, other transient disorders, like numbness and clumsiness of a limb, or hesitancy of micturition, are found to have occurred even after intervals of many years of good health, in spite of a complaint from the relatives that the patient has become more emotional than before. This symptom in itself is significant in such a story, for it is common for patients with disseminated sclerosis to laugh or cry too easily, and has undoubtedly an organic basis. To stress the meaning of a history of this kind is perhaps to underline the obvious, if it is supported by the presence of physical signs; but experience has shown that its diagnostic importance is not much diminished by the absence of physical abnormalities. They will almost certainly appear later.

Physical Signs

Coming to the physical signs of neurotic ailments, we can put to one side the exaggerated reactions to fear, at the same time remembering that they may be indications of mild hyperthyroidism, which is often mistaken for a psychoneurosis. It is sometimes difficult, or impossible, to say which is primary—the glandular disorder or the anxiety state. Long-continued emotional stress seems to stimulate thyroidal activity, and it may be said with some reason that the naturally over-anxious person has also, as a part of his heritage, an abnormally active thyroid gland. This association probably determines the onset of illness in many women who break down at the climacteric. The major part of the symptomatology of the so-called menopausal neurosis as well as the physical signs are those with which we are familiar at earlier periods of life in cases of mild hyperthyroidism. The neurotic physical signs which will be particularly discussed are those of hysteria. From the point of view of physical examination the diagnosis of hysteria rests on: (1) the absence of signs of organic disease; and (2) the presence of positive signs of hysteria.

Certain manifestations are invariably organic in origin. Of these the most important are dysphasia with or without dysgraphia, papilloedema and optic atrophy, nystagmus with the slow movement towards the rest position and the quick movement towards the object of fixation, absence of vestibular reactions, local muscular atrophy with alteration in the electrical excitability coming on within a few weeks of the onset of paralysis, inequality of the abdominal reflexes or the tendon jerks or abolition of the latter (the abdominal reflexes are difficult to obtain in people with lax abdominal walls), and a true extensor plantar reflex.

Many sensory abnormalities are of equal value. Some only will be mentioned, and others will be referred to later. Of defects in the visual fields, central scotoma for red and green, with reduction of visual acuity and homonymous or bitemporal field defects, especially if quadrantic, are important; so also is pain which consistently is in the distribution of spinal posterior roots, all the more if it is associated with cutaneous tenderness or sensory loss. There are other pains, such as those of tic douloureux and the lightning pain of tabes, and the neuralgias of the head and face, due to sinus infection, which have features of their own. Certain varieties of sensory dissociation occur only from organic lesions. Obvious examples are the analgesia and thermo-anaesthesia of segmental distribution with preservation of tactile sensibility in syringomyelia and other central lesions of the spinal cord, and loss of postural sensibility with ataxia, diminished vibratory sense, and astereognosis as the predominant sensory defects from posterior column lesions.

To the unwary, however, some of these physical signs may appear to be present, whereas they are the result of faulty methods of examination or a lack of familiarity with normal variations. Thus, in testing the tendon jerks, care must be taken that the two limbs which are being compared are in the same position and the muscles relaxed. In regard to the plantar reflex, most stress should be laid on the response obtained from the outer edge of the sole, which is the focus of the receptive field for the reflex. With slight lesions of the pyramidal tract the abnormal reaction may be obtained only from this part, and stimulation of the rest of the sole may yield the normal downward movement of the toes. In doubtful cases help is usually obtained by observation of the reaction of the rest of the limb to plantar stimulation. In normal people who are not over-sensitive, the flexor plantar response is often accompanied by a quick contraction of the muscles in front of the thigh, whereas if the reflex is organically abnormal, whether the toes move up or fail to move, the limb flexors tend to contract. This contraction can be best appreciated in the hamstrings by feeling their tendons tighten. If then the toe response is different on the two sides, observation of the effects of the response on the quadriceps and hamstrings in each limb is often helpful. If the patient is over-sensitive, and especially if the stimulus is painful and applied roughly without due warning, the reaction in the limb is likely to be a sudden flexion or withdrawal of the limb, and the toes may either extend or flex. This is largely a voluntary response.

A superficially similar reaction is common in severe spastic paralysis of organic origin, but there are important differences. In the organic case, as the pin is being drawn along the sole from the back to the front of the foot, jerky flexion movements associated with extension of the toes commonly occur before the limb becomes vigorously flexed. Sometimes, however, violent withdrawal is almost immediate. Observation of the after-response is then of value. In the organic case, if the spasticity is more extensor than flexor, the limb, after a brief delay, is vigorously thrust out with the muscles in strong contraction, the toes being usually extended. Should the spasticity be predominantly in the flexor muscles of the limb, the subsequent reaction to withdrawal is slower and jerky. Once these reactions have been seen they can again be easily recognized. Usually, however, the response to stimulation of the sole is not the only available physical sign for diagnosis. The tendon reflexes, the reaction of the muscles, if rigid, to passive stretching and to voluntary efforts, are all of the greatest value. The final conclusion will rest on the whole available evidence.

The other source of fallacy lies in the want of recognition of normal variations—for example, the confusion between the haziness of the optic disk in a hypermetropic eye and papilloedema, and between a large physiological cup and optic atrophy; so also is apparent weakness of one side of the face and tongue the result of natural asymmetry of the facial bones.

Physical Signs of Hysteria

A psychoneurosis is the outcome of an attempt to solve a mental conflict. The imperfect and irrational solution results in illness which, as in anxiety states, still leaves the patient with fears and obsessions. In hysteria, however the development of a physical disability, such as paralysis or blindness, is, as a rule, completely satisfy-

ing, and with its appearance worry vanishes. "Belle indifference" has long been known to be characteristic of the simple hysteric whose anxiety returns if he is compelled by the suggestions from a personality he believes to be stronger than his own, or by sudden emotional shock, to give up his fears and obsessions. The cure of hysteria, therefore, demands not only the disappearance by suggestion and explanation of physical disabilities, but also a reasonable adjustment, satisfying to the patient, of the conflict which led to their appearance. Hysterical symptoms may, however, and frequently do, form an incidental part of other psychoneurotic illnesses, and psychotic states, such as depression and schizophrenia, as well as gross physical illnesses, are often not free from them.

Hysterical manifestations are mental in origin, and are determined by the individual's idea of what constitutes paralysis, loss of sensibility, or a fit. They do not, therefore, conform to the rules of pathological physiology and anatomy. It is this discrepancy that enables the physician to differentiate between signs of hysterical and those of organic origin.

Hysterical Paralysis

Almost the whole body, or one side of it, or a limb, or only the peripheral part of it may be affected. Paralysis limited to the adductors of the vocal cords, resulting in aphonia, is common. The distribution and form of the paralysis is determined by suggestion frequently provided by a physical illness or accident, which in itself is often trivial. Thus laryngitis may lead to aphonia, or a slight wound to the hand to paralysis of this part. The factor which determines the perpetuation of disability in hysterical form is a state of anxiety with consequent unhappiness, or a fear of the future, after the physical illness is over, and it may be that the patient unconsciously welcomes disablement so that he need not continue with disagreeable tasks or can attract sympathy, while at the same time the necessities of life, flavoured with luxuries, can be provided for him by others.

Characteristics of Hysterical Paralysis

It is often selective. All voluntary movement in the affected part may appear to be impossible, but there are no reflex signs of organic significance or wasting, unless the paralysis has lasted for many months. The paralysis may, however, be incomplete. In such cases two forms of reaction may be observed. The first is that the patient is unable to use certain muscles for one voluntary movement, while he is able to employ the same muscles for all other voluntary movements for which they are required. The following examples are illustrative. The hysterical aphonic talks in a whisper but can usually cough to command, equally a voluntary act. So also the act of writing is difficult or impossible in writer's cramp, although the hand is as good as ever for all other movements. That the paralysis represents an idea of disability is again shown by the case of the sergeant who, after fighting successfully for three years, quite naturally became tired of it, but discipline and a sense of duty compelled him to struggle on in spite of his desire to escape. During a bombing attack he was slightly wounded on the forearm, and soon after became unable to grasp a bomb or a rifle with his right hand, but never lost the power to use it for other purposes. The paralysis, which incapacitated him from fighting but for nothing else, enabled him to get the rest he required with preservation of his self-esteem.

Again, in the form of hysterical paralysis known as astasia-abasia, the inability is confined to standing and walking, for in bed all voluntary movements of the lower limbs can usually be well carried out. The same inconsistency can be observed in cases of ataxia. Thus, although the patient staggers in walking and sways when standing, especially if asked to do so with closed eyes, so long as these actions are in his mind, he will, nevertheless, stand steadily if his attention is directed to the examination of his pupillary reactions.

The second form of reaction consists of the display of excessive effort, which is manifest not only in a general way by clenched teeth and hands and of violent muscular exertion of the non-affected portion of the body as if the patient were trying to show that he was doing his best, but also by strong contraction of the opposing muscles at the joint of the affected limb which he is asked to move. Either no movement results, or it is accomplished in jerks due to irregular relaxation of the muscles opposed to the prime movers. These two modes of behaviour are diagnostic of hysteria, and, if recognized, cannot lead to confusion in diagnosis.

Passive movement of a paralysed limb in hysteria may evoke no resistance, or resistance of a diagnostic kind may be encountered. It is then proportionate to the effort expended by the physician in the sense that the more he tries to move the joint so the resistance steadily increases. This reaction, which is due to muscular spasm brought about by the unconscious or, more truly, the partially conscious efforts of the patient to resist, can easily be differentiated from the two common varieties of organic muscular rigidity. These are due to pyramidal and extra-pyramidal motor lesions. When one attempts to bend the paralysed knee of a patient with spastic hemiplegia, the so-called clasp-knife rigidity is encountered. At first the movement is easy, then resistance is suddenly encountered, but if pressure is maintained it gives, although not completely, and the rest of the movement can be carried out fairly easily and with diminishing effort. In Parkinsonism the tonic reaction of the affected muscles is different. It is displayed throughout the whole movement at the joint, but is jerky, hence the term "cogwheel" rigidity. Its jerky character can, as a rule, in slight cases of Parkinsonism, be most easily detected at the wrist, but it should be remembered that the hand may have to be moved in flexion and extension several times before it appears.

The various contractures met with in hysteria are the result of muscular spasm, which increases when attempts are made to overcome the abnormal posture either by the patient or the physician. Furthermore, postures of the limbs always differ, at least in detail, from those of organic spastic states, and not uncommonly the hysterical contracture is limited to a hand or foot. That hysterical contracture is due to active spasm is well shown in cases in which there is apparent weakness of one half of the tongue. The tongue, say, is protruded to the right, but when withdrawn into the mouth it still deviates to the same side, whereas if the unilateral paralysis had been organic, retraction would inevitably cause deviation to the opposite side. So, also, hysterical diplopia with convergent squint is the result of voluntary or semi-voluntary contraction of the internal recti.

No manifestation of hysteria can be recognized so quickly as the manifold disorders of gait. One or both limbs may be affected. The patient may drag the paralysed limb along behind him with the foot firmly scraping along the floor, or will ostentatiously, in his jerky and irregular progress, clutch at objects in his way that would give him support. The observer who may be helping him to walk is soon aware that the patient is trying less to support himself than to sink to the ground, quite unlike the sincere efforts of the paraplegic whose disability is of organic origin. Hysterical helplessness in walking is all the more striking if, as may be the case, movements of the lower limbs are well carried out in bed.

Hysterical Sensory Disorders

Loss of sensibility in hysteria differs fundamentally from that due to organic causes. In the first place, it fails to conform to anatomical distributions—central, root, or peripheral. Thus, cutaneous analgesia in a limb tends to stop short at obvious landmarks such as the wrist, ankle, or knee. If it extends to the groin in front it is bounded behind by the fold of the buttock, and does not include the lower sacral areas. If the whole upper limb is analgesic the upper border encircles the shoulder-joint, a distribution which would be impossible in organic states. So also the front of the trunk may be insensitive while the back is intact. Secondly, the boundary of the analgesic area is sharply defined. Polyneuritis and subacute combined degeneration give rise to cutaneous sensory loss encircling the lower limbs or trunk, but the analgesic areas correspond to peripheral or segmental sensory distributions and their upper borders are never abrupt.

In organic states examples of sharp delimitation between regions of normal sensibility and sensory loss are few and are well explained on anatomical and physiological grounds. When, for example, there is analgesia over one half of the body, the line of demarcation between the areas of abnormal and normal sensibility is sharp. But should there, in addition, be absence of vibratory sense in the limbs and abdomen, on one side, a vibrating fork can still be appreciated by the chest, especially if it is placed near the sternum, since the chest is a sounding-box. In complete hysterical hemianaesthesia, however, appreciation of vibration may well be abolished on one half of the chest as well as cutaneous sensibility.

When there is complete loss of sensation below a level on one or both sides of the body, if the sensory loss is organic its upper border will have segmental or root characteristics, whereas in hysteria it will not. For example, the upper border of analgesia on the trunk, when organic, is never strictly transverse, but follows well-known wavy lines, whereas in hysteria it does not. Lastly, because of the budding out of the limbs, certain sensory root and segmental areas become contiguous with others from which they are separated by those which correspond to intervening roots or segments, so that the sensory overlap is absent. When this happens the borders of sensory loss are sharply defined. These regions of strict delimitation are especially between the outer and inner aspects of the upper arms, the anterior and posterior aspects of the thighs, and the sacral saddle-shaped areas in the buttocks ; on the trunk, a similar abrupt transition is found roughly at the level of the second ribs in front and the spines of scapulae behind, where the dermatome of the fourth cervical segment marches with that of the second thoracic.

A third characteristic of hysterical sensory loss is that it can be varied and abolished by suggestion. A fourth is that the inevitable, indirect consequences of organic sensory loss may be absent in hysteria. For example, ataxia of the lower limbs in polyneuritis, tabes, or Friedrich's ataxia is due to loss of postural sensibility from lesions of peripheral nerves, sensory roots, or posterior columns, and is naturally worse in the dark and if the patient's eyes are covered. In carrying out Romberg's test in the hysteric, however, the response obtained will, as has already been mentioned, depend upon whether or not he understands that his steadiness or some other function is under investigation. Hysterical loss of vision illustrates the same principle. Blindness may appear to be complete ; but, even so, the pupillary reactions to light are brisk, the fundi are clear, and the patient usually succeeds in avoiding objects when he attempts to walk about. Spiral fields of vision have long been known to indicate hysteria, and doubtless are the result of suggestion in performance of the test. Unilateral blindness and deafness may occur in association with complete hemianaesthesia. The psychogenic origin of the deafness as in cases of bilateral deafness can be recognized by evoking nystagmus by rotation of the body, and the blinking reflex by a sudden noise.

Fits

It is sometimes difficult, if an attack has not been observed by a competent witness, to decide whether a fit is epileptic or hysterical, especially if there is no history of injury during a fall, incontinence, or tongue-biting. All these features, which are common in epilepsy, may at the same time be absent. If the physician or a trained nurse has observed an attack it is usually easy to arrive at a correct diagnosis. The hysterical seizure is characteristically a dramatic performance with arching of the limbs and trunk, violent purposive movements, and often shouting and articulate speech. The patient may become cyanosed from holding his breath, but his eyelids are usually tightly shut and resist efforts to open them, and his pupils react normally to light. Furthermore, after the attacks the tendon-jerks and the plantar responses are invariably normal. Difficulties may, however, arise if the physician is unacquainted with less recognized forms of epileptiform attacks. Thus, in so-called tonic fits due to sudden disturbance of function of the upper part of the brain stem from organic lesions such as tumour or tuberculous meningitis, there is opisthotonos and the limbs are rigid, the lower in extension with pointing of the feet and toes and the upper flexed or extended ; but the eyes are open, the pupils are usually inactive to light, and incontinence may occur. Certain minor seizures, especially if unassociated with loss of consciousness, may present more difficulty. Thus in " myoclonus epilepsy " as the result of sudden muscular contraction the patient, although conscious, may fall down, or, if an upper limb is the part affected, an object held in the hand may be thrown across the room. So also in cases of " inhibition epilepsy," in which muscles of the limb are suddenly relaxed, falling may occur without apparent loss of consciousness. Again, involuntary clonic movements are often limited to a limb or one side of the face in Jacksonian attacks associated with focal cerebral lesions, but physical signs are to be found in the affected part at least for a time after the seizure. The necessity for routine examination of the optic disks is recognized but is not always applied.

Hysterical amnesias and fugues may occasionally be difficult to differentiate from automatism following petit mal attacks, but a careful history is usually decisive. Moreover, the hysteric in a fugue is not inclined to empty his bladder, as in the classical case of Trousseau's Judge, remove his clothes in public, or be homicidal ; in fact, his actions usually pass unnoticed. A chronic epileptic is often an emotional subject, and may show hysterical symptoms from time to time like other unstable persons. Nevertheless, there is little justification for the term " hystero-epilepsy."

This leads to the last point to which I would draw your attention. Emotionalism does not necessarily mean that the ill person has not some organic illness. It is perhaps equally unnecessary to say that states of anxiety may act as precipitating causes of physical disturbances, such as migraine, intracranial hypertension headaches, and occasionally epileptic attacks, as well as aggravating enfeeblement of organic origin. But it is less generally recognized that emotionalism may in turn be due to proven structural disease of the brain. Emotional facility, with an undue tendency to laugh or cry, is one of the commonest manifestations of disseminated sclerosis, a disease in which the transient character of the early disorders of function is apt to lead the unwary into making a wrong diagnosis.

All the more so if at the time of examination no physical signs are discovered. A similar emotionalism occurs also in pseudo-bulbar palsy, progressive bulbar palsy, chronic alcoholism, dementia paralytica, and occasionally with cerebral tumours, but by the time it appears, clear indications of structural damage can usually be found.

Lastly, the apathy of Parkinsonism, which is often more apparent than real, may be wrongly interpreted as psychogenic. But quite apart from the unmistakable physical abnormalities, even in early cases, which are now common knowledge, the lack of emotional reaction should in itself lead one to suspect its organic basis.

In conclusion, while the analysis of symptoms and signs is of the utmost value in the subject under discussion, the investigation of the behaviour of the individual as a whole in the past as well as in the present is the basis upon which diagnosis has often to rest. Let us not forget, too, that a neurotic may develop organic troubles like other people, and also that a person may become mentally unstable as the result of anxieties consequent upon physical disabilities. In this respect, minor head injuries ought especially to be remembered.

DIFFERENTIAL DIAGNOSIS OF ORGANIC AND FUNCTIONAL NERVOUS DISORDERS*

BY

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The differential diagnosis between functional and organic nervous disease is obviously a wide subject. At the outset an exact definition is needed as to what constitutes functional nervous disease. Broadly, this may include all nervous manifestations in which no evidence of pathological changes in the nervous system has been demonstrated. Cases of dysfunction without demonstrable organic lesion may therefore be classed among the functional cases, and disturbances resulting from psychological stresses in the highest psychic level will also need to be included. The symptoms of the diseases commonly known as the neuroses or psychoneuroses will, of course, come under review, as will some of the psychoses. While some psychoses, such as general paralysis, have a very evident organic basis, others represent derangement of function, and little objective organic evidence may be obtainable.

The association of so-called functional elements with organic lesions raises an even wider issue. Cases in which no functional element was apparent before an organic lesion developed bring up the whole question as to the relation between these groups, and as to how far they can be justifiably separated. The attempt may be difficult, as may be judged from the fact that a leading neurologist stated, in discussing hysteria, that there were few organic symptoms which he had not seen reproduced in that disease. Functional disorder of the nervous system may disturb any bodily system and lead to confusion with diseases other than those of the nervous system, and separating the functional incapacity in a given lesion from that due to organic disease may be very difficult. In a short paper it is obviously impossible to deal with all aspects, but I shall endeavour to show the importance of examining the problem as a whole, and of not neglecting the psychological approach.

* Read in opening a discussion in the Section of Neurology, Psychological Medicine, and Mental Diseases at the Annual Meeting of the British Medical Association, Bournemouth, 1934.

Consideration of the person's whole make-up and circumstances often renders the diagnosis clear when individual symptoms may be very puzzling. Recognition of a hypochrondriacal attitude of mind is of great importance in the valuation of symptoms. This abnormal concentration on the individual's own body represents a psychological abnormality, whether it is present as a simple neurosis or whether associated with a depressive or paranoid psychosis.

Neurasthenia

As I am approaching the subject rather from the functional point of view, I shall first consider the different aspects of the neuroses. While hysteria and its subsidiary, the traumatic neurosis, perhaps provide the principal problem, neurasthenia and anxiety neurosis, and the various mixed types, also need consideration. By neurasthenia I mean the exhaustion neurosis, in which the patient shows marked mental and physical fatigability.

The individual is usually a limp, sparely nourished, unhealthy-looking person, unable to concentrate, finding all exertion, mental or physical, too great. If attempting to perform a physical act he rapidly tires, and he becomes increasingly inefficient when faced with a mental task. Special tests prove this to be a feature of a genuine case. Such a state of affairs exists to some extent after any great and debilitating illness, but the conditions persist in the neurasthenic long after the recuperation would have taken place in the normal individual.

The presence of anaemia, tuberculosis, or any chronic associated factor must of course be eliminated, and then arises the question of some chronic toxaemia. The teeth and intestines fall under suspicion, sometimes rightly, but at times drastic measures in regard to these are adopted without avail. Sometimes the case is one of incipient melancholia, the loss of interest and disinclination to exertion being a stage in the depressive phase of a cyclothymic or manic-depressive psychosis. What is at first regarded as a post-influenzal debility, and then as neurasthenia, may ultimately prove to be the early stage of a depressive psychosis. Usually, however, the associated depression, as opposed to a limp apathy, differentiates between them. Too much listless apathy and indifference to external circumstances would, on the other hand, arouse the fear that the case was really one of schizophrenia, but the pure neurasthenic is not given to fantasy, "day dreaming," and other features of the praecox case. Although the fatigability of the muscles in myasthenia gravis to some extent suggests neurasthenia, it is not common to confuse the condition. The facial muscles are usually quite mobile in neurasthenia, and there is no paralysis of groups of muscles such as the orbicularis palpebrarum or palatal muscles. The acute symptoms of encephalitis lethargica are hardly likely to be confused with neurasthenia. The dulling and immobility of mind of the encephalitic might be confused with a neurasthenic or depressive individual, but the mask-like rigidity and salivation so common in the former are quite uncharacteristic of the latter. The dull immobility of the praecox syndrome, possibly associated with salivation, is far more likely to be confused with the effects of the encephalitis lethargica, and confusion has at times arisen. The encephalitic, however inhibited, is more fully alert, given time to express himself, while the praecox is actually confused, and no amount of time allowed for expression will improve matters. The mannerisms and wrinkled forehead of the praecox are usually distinctly different from the mask-like face of the encephalitic. Mentally, variability and inconsequence, or perhaps stupor, will contrast with the slow, inhibited endeavour to find expression. This slow,

hesitant expression may perhaps resemble the retarded melancholic, whose furrowed facies contrasts with the encephalitic. Genuine acute depression is sometimes added to the encephalitic syndrome. A full recognition of the mental and physical wreckage that the disease has brought may cause the individual to feel that death is the only solution to his difficulty. Suicide is a real risk in such cases, which are sometimes very logical in their depression.

The older type of neurasthenic presents other problems. Such cases are not obviously of the type of which it has been said that their vitality has been squandered by their ancestors. In other words, the predisposing congenital element is less evident, and one seeks other causes. Real mental and physical strain may have preceded a collapse, and the toxins of alcohol, tobacco, etc., may have influenced them. When the stress reaches breaking-point quite a sudden collapse may occur in these cases. Eliminating the more obvious alcoholic syndromes, neurosyphilis should be remembered as a possible cause. A neurasthenic attack in the middle-aged should always be regarded with suspicion, particularly if the patient has not previously shown tendencies of this type, and signs of neurosyphilis should be looked for and the serological findings tested if there is doubt.

Anxiety States

The varied manifestations of the anxiety states perhaps provide more difficulties than other syndromes owing to the variety of the symptomatology, and also owing to the fact that the patient is obviously so sane and so genuinely affected by his symptoms. Fear and apprehension is the prevailing feeling of the individual, who is in a general state of excitation. Many symptoms suggest sympathetic stimulation. Some symptoms, however, suggest disturbance of the parasympathetic supplied through the vagus, and while the names vagotonia and sympatheticotonia have been applied to the different conditions, the symptoms are so frequently mixed in type that it is better merely to say that they represent functional disturbances of the autonomic nervous system.

Closely allied are the vasovagal attacks, in which the patient exhibits a sudden sense of oppression, usually starting with an epigastric sensation, followed by dyspnoea, and disordered action of the heart and even a sense of impending death. Similar symptoms are observed in the acute or paroxysmal phase of the anxiety syndrome, and when, as rarely happens, consciousness is lost, the condition may even suggest epilepsy. It is, however, much more likely to suggest some other cause for fainting, and may even be mistaken for some cardiac condition such as coronary thrombosis. The patient usually merely fears he is about to lose consciousness; he is in a state of acute fear and apprehension, and may fall over slowly, clutching at things as he falls, and making every effort to regain control. There is not the careful disposition and dramatic effect seen as in the true hysterical fit, the patient being genuinely distressed.

At times the condition may suggest a minor cerebral attack, as the patient may complain of a feeling of congestion in the head or say he feels as if his head were going to burst. The pulse is rapid, and may even seem inhibited, but irregularity apart from cardiac disease is, in my experience, not usual. Respiratory attacks, with a breathlessness resembling air-hunger, may also be a feature of the acute attack. A study of the interparoxysmal symptoms and of the psychological basis will help to make diagnosis clear. Where there is obvious sexual excitation without relief, faulty methods of contraception, leading perhaps both husband and wife to seek advice, or general causes likely to lead to anxiety, the nature of the case becomes clearer. The interparoxysmal symptoms, although more likely to resemble diseases of other systems, will help in elucidation. The disordered action of the heart with precordial pain, and no evident organic lesion, so commonly seen during the war, is a common symptom. Sweatings of the palms may occur, and this may be more generalized. The tremor, combined with the rapid cardiac action, may suggest exophthalmic goitre, with which the condition may, indeed, be associated. Symptoms of intestinal disorder have been referred to, such as eructation, vomiting, various results due to irregular peristaltic contractions, and diarrhoea, even with tenesmus—all symptoms of the fear syndrome, and aptly illustrating the well-known phrase, "Their bowels were turned to water."

In some cases the psychological basis may be less evident, and abnormal vagal stimulation on the lines of oculo- and gastro-cardiac reflexes appears to result from gastro-intestinal movements. At times abdominal manipulation will make the patient realize that the origin of the vague discomforts and sensations complained of lies in movements of the gut. Between the anxiety syndrome and the hysteric occurs anxiety hysteria, a definite neurosis, in which are classed those whose hysterical reaction mainly expresses itself in mental anxiety symptoms. Apart from this, mixed types occur in which it may be difficult clearly to separate the anxiety and hysterical symptoms.

Hysteria

The hysteric is the classical simulator of many diseases, but much time and trouble might be saved if more effort were made to study the patient as a whole, instead of concentrating upon individual symptoms. To deal with a hysteric much study of the patient's immediate and remote situation is necessary, but an accurate appreciation of the immediate situation will often enable a quicker and more accurate diagnosis to be made than if the approach had only been from the physical aspect.

Some hysterics are first seen in the psychological department of a general hospital, while others arrive there with a dossier from all the other departments, elusive symptoms having been followed from system to system. The family doctor is in a particularly favourable position to see and appreciate the family situation, which is the basis of the faulty reaction. At times, by judicious advice, he may alleviate the intolerable situation which is being shirked. Hysterical symptoms represent an idea of the patient tending to satisfy the subconscious purpose. The nature of the symptoms may be determined by the type of disability most useful to obtain that end, or in case of a traumatic neurosis by an original injury to that part. The lesion is usually a loss of function, but is associated with the general petulant emotional reaction of a hysteric. Such lesions may occur either on the psychological or on the physical plane. Among the former may be mentioned the amnesias, fugues, cases of double personality, and also the stupor, while the latter will show sensory and motor changes—that is, anaesthesia, hyperaesthesias, and, on the motor side, convulsions and palsies.

Dealing first with convulsions, a case of major epilepsy seen in a fit is probably the simplest problem. The hysteric seldom produces the different stages of the fit at all, realistically, and still less the post-epileptic confusion and coma. A well-described true aura is also against a diagnosis of hysteria. In the post-epileptic state extensor plantar responses would negative hysteria but not epilepsy. To some extent the general mental make-up will help to differentiate the childish and probably dull and irritable epileptic from the petulant but quicker-witted hysteric. In some cases this will not help

particularly in the very difficult problem of the hysterical epileptic—that is, the epileptic with hysterical manifestations. Where obvious attacks of true major epilepsy alternate with equally obvious hysterical outbursts, little difficulty arises, although an observer who has only seen one or other group may be deceived. Rarely, epileptics can simulate genuine fits to an extent which can deceive, and I have known a hysterical epileptic have realistic "pseudo-fits" at a demonstration. It is usually, however, the combination of petit mal with hysterical manifestations which deceives, and until some indication of the epilepsy, such as unexplained bed-wetting, occurs, the real nature of the case may be missed, always remembering that even these symptoms have been counterfeited by hysterics. The many other causes of convulsions are more likely to be confused with epilepsy than with hysteria, but an unexpected fit without previous history may arouse suspicion as to a functional origin.

Some Causes of Convulsions

Among the other causes of convulsions may be mentioned conditions causing intracranial tension. Fast-growing tumours are unlikely to be confused, as the evident signs of pressure develop, but slow-growing tumours in which signs of pressure develop slowly may cause confusion. In a case in point of one of these slow-growing tumours, an oligodendroglioma produced the first fit, for which the patient was invalided from the Navy seventeen years before death.

Localization by mental symptoms is not reliable owing to the variability of these symptoms, which may occur even in subtentorial cases. Tumours of the frontal lobe, and perhaps of the corpus callosum, are, however, more apt to be associated with early mental symptoms than those in other areas, and deterioration and dementia may occur even before signs of pressure make the nature of the case obvious. At times such a dementia may be associated with dysarthria, causing general paralysis to be suspected in what is really a frontal tumour syndrome. Confusion and deterioration occur in cases of Picks's and Alzheimer's diseases, as well as in cases of cerebro-arteriosclerosis, where temporary confusion from a recent vascular lesion may be added to a permanent deterioration. In all the above cases convulsions may occur which need differentiating from epileptic or hysterical manifestations, and similar convulsions may occur with alcoholism, and certain cerebral poisons such as lead, mercury, etc. The convulsions due to metabolic disturbances must be remembered, such as uraemia, eclampsia, and hypoglycaemia, and, in childhood, disturbances associated with infection, rickets, and teething, which last may represent the earliest signs of epilepsy.

A further convulsion which may need differentiating from epilepsy or hysterical convulsions is the fit associated with tetany. In one case, a woman of about 30 years, who had had a partial thyroidectomy for exophthalmic goitre, developed fits of a tetany type, some of which developed into generalized convulsions. Her blood calcium was low, but improved to normal under treatment with calcium and parathyroid. Her fits became less and less suggestive of tetany, and more characteristic of genuine epilepsy.

Convulsions can also occur in disseminated sclerosis, but it is not in this way that the disease is usually confused with hysteria. It is in the early stages that the variable losses of power with remittent tendencies occur, which cause the diagnosis to be at times in doubt before evident signs of the organic lesion develop. The reaction of the disseminated case is at times not unlike that of the hysteric, and hysterical symptoms may even be added to those due to the organic disease. Generally, the paraplegia is more suddenly and dramatically complete in a hysteric, whereas other organic symptoms will be evident in the disseminated case, presenting a complete spastic paraplegia.

Motor and Sensory Disturbances in the Hysteric

Hysterical paralysis may affect any of the senses or limbs, or a combination of limbs. The lesions most commonly met with are probably paraplegia or monoplegia of an upper limb, and aphonia. The hysterical paraplegia leads to a complete incapacity, necessitating the care and eliciting the attention and pity that the hysteric desires. In the poorer classes it may lead to admission to a hospital, and so cause a removal from irksome home conditions. Signs of organic lesion will, of course, be absent, although disuse phenomena may occur later. Control of organic sphincters will usually be retained, although at times lack of control of these functions may occur which may be accompanied by neglect of person. Usually, however, apart from the lesion complained of, conduct will be excellent, and the individual will suffer as little inconvenience as possible, consistent with the lesion. Sensory loss may or may not accompany the paralysis, and when present may help with the diagnosis, owing to inconsistencies incompatible with an organic lesion. The underlying psychological idea of a paralysis may at times be traced, as in the case of a girl with a monoplegia of an upper limb which she had used to repulse her lover when he attempted liberties, the paralysis representing subconscious regret that she had so repulsed him. Usually the diagnosis is not difficult, the paralysis being limited to a movement or limb. When a movement is taking place, apparently with great difficulty, marked contraction of the antagonistic group of muscles will be evident, as well as contraction of the primary movers, which would not occur in a genuine paralysis. If rigidity is present investigation increases it, and endeavouring to overcome it provokes emotion from the patient. In gait, the tendency of a hysteric is to call attention to his lesion by dragging the limb, whereas the paralytic endeavours to compensate for his deficiency by circumduction. Similarly, tremors increase on observation and cease when attention is distracted to other parts.

The movements known as tics are commonly attributed to automatic or habit spasms, possibly associated with a local irritation or stimulus. At times, and in their early stages, they represent definite symbolic movements on the lines of a compulsion neurosis, the performance of which satisfies the unconscious wish whose emotional effect has been transferred to the symbolic act. The treatment of such cases is difficult, but tracing the tic to its origin, where this is possible, should release the pent-up affect attaching to such symbolic movements. Sensory loss without paralysis is much less usual in hysterical patients, although hyperaesthesia may be complained of as a means of eliciting sympathy. The hallucinatory disturbances of cutaneous and organic sensations seen in some of the psychoses are complained of in more general terms as burning or electrical sensations, and not as painful points of definite specified hyperaesthetic areas. Further, the depressed cyclothymic patient has a very different general reaction, and, although in certain phases the schizophrenic may resemble the hysteric, his reaction is essentially introverted, and he is unlikely to obtrude his symptoms.

Hyperaesthesia and other disturbances associated with dyspareunia due to some sexual incompatibility are important, as the whole group of symptoms is readily understood when the underlying attitude is revealed. Such symptoms mainly cause confusion with minor gynaecological conditions, and range from simple complaints of pain to elaborate hypochondriacal ideas with abnormal

paranoid trends. They include real cases of abnormal sexual incompatibility, ranging down to cases which have failed to adjust in regard to contraception, with fears of pregnancy, and menopausal cases, where one of the parties has ceased to desire sexual relations. An appreciation of this saves much investigation of elusive symptoms.

Coming to the special senses, blindness, deafness, and loss of speech may all occur. Elaborate tests to deceive the senses have been evolved to prove the functional nature of the cases. Unilateral blindness is perhaps more usual; conjunctivitis is not uncommon, being easy to produce and resulting in a similar incapacity. Aphonia, where phonation is lost but articulation is preserved, is the common hysterical lesion, as the patient can still converse in a whisper, again suffering incapacity without great inconvenience. The partially adducted state of the vocal cords is characteristic. The adoption of face-saving methods in inducing speech by faradism facilitates cure of this symptom.

Mutism is more generally a sign of stupor, although it may occur in persons fully alert mentally, but silent owing to hysterical or delusional ideas. Among the common causes of stupor may be mentioned post-epileptic phenomena, depressed cyclothymic cases, hysterics and schizophrenics, and cases of so-called idiopathic stupor. Somnolent cases of encephalitis lethargica may resemble this state, and cases of pathological somnolence or narcolepsy, some of which may be associated with organic lesions, such as cerebral tumour. Among the rarer conditions may be mentioned such a phenomenon as cataplexy, a condition in which movement is impossible, although consciousness is retained. While some of such cases have a physiological basis, many on investigation will be found to be cases of hysteria.

Without an adequate history, differentiation between the conditions may be difficult. The principal difficulty is in separating the cases of hysteria from the praecox syndrome. The hysterical type, fully alert to her surroundings, who, under suggestion or other suitable conditions, passes into a hysterical trance, is usually obvious, but when extended periods of stupor, with few if any remissions, occur, with marked dissociation, the fear will be that the case is one of serious schizophrenic dissociation, even when mannerisms and other suggestive schizophrenic symptoms are absent.

In conclusion, I would again repeat that neglect of the psychological aspect leads to failures in diagnosis and treatment, owing to undue emphasis being placed on the individual symptoms. When both physical and mental aspects are considered, a true perspective is obtained, with beneficial results both to doctor and to patient.

With the July issue of the *Fortschritte auf dem Gebiete der Röntgenstrahlen* began the fiftieth volume of a monthly periodical which has rendered very great services to radiology the world over. Founded in 1897 by Heinrich Albers-Schönberg, who was himself a radiological pioneer, it has given publicity to many of the outstanding discoveries in connexion with x rays, and been a foster father to various of the subsequent journals which dealt with the more specific applications of this subject as they came into being. It has been adopted as the official organ of radiological societies in Czechoslovakia, Austria, Hungary, and Russia, as well as in Germany, and has won universal recognition as a sound and reliable as well as a progressive periodical. It is only right that the July issue should begin with the first Albers-Schönberg memorial lecture, which was delivered at the congress of the German Radiological Society in Baden-Baden last April. The present editor is Professor Rudolf Grashey-Köln.

MECHANICAL TRANSMISSION OF TRYPANOSOMIASIS, LEISHMANIASIS, AND YAWS THROUGH THE AGENCY OF NON-BITING HAEMATOPHAGOUS FLIES

(PRELIMINARY NOTE ON EXPERIMENTS)

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In this preliminary communication it is not intended to review and discuss fully the immense literature on experimental and field observations regarding the direct transmission of trypanosomes, leishmania, and other blood-inhabiting organisms. It is proposed, however, to emphasize the important part which may be played by non-biting haematophagous flies in the mechanical dissemination of blood-inhabiting organisms, which appears hitherto to have been largely overlooked.

Most authorities are in agreement that, apart from cyclical transmission through the agency of tsetse flies, direct methods of infection by *Tabanidae, Stomoxys,* and other biting flies play an important part in the active spread of trypanosomiases. Thus Duke (1919, 1921, 1923) believes that the sleeping sickness epidemics which sweep over certain parts of Africa are due to mechanical infection from man to man by tsetse flies; and Hornby (1921) states that the direct spread of trypanosomes among domestic stock is by no means uncommon as the result of the introduction of an infected animal into a clean herd living in a tsetse-free area. Wenyon (1926), in summing up the evidence on mechanical transmission, says it has been clearly demonstrated that a purely mechanical infection may occur by a biting fly contaminating the wound it inflicts with infective blood which it has recently taken into its proboscis from another host.

Earlier Observations on Fly Transmission

In proportion, however, to the amount of research that has been undertaken on direct transmission, the positive experimental evidence that has been brought forward incriminating these biting flies is so meagre as to suggest that the mechanism of this method of transmission is not fully understood. It was concluded so recently as 1933, at the conference at Entebbe on the tsetse and trypanosomiasis, that further information based on experimental work was necessary to elucidate the problem of mechanical transmission.

Work on the transmission of the tissue-inhabiting pathogenic protozoa by Diptera other than the biting species, *M. domestica* in particular, is on record, though the observations are scanty. Castellani (1907) fed *M. domestica* and allied species of flies on scrapings from yaws which contained *Treponema pertenue,* and afterwards, by transferring them to scarified sores on monkeys, produced an infection in one of the experimental animals. The flies were kept in position on the sores of the monkeys for two hours. Darling (1913) reported mechanical transmission of *T. evansi* (*T. hippicum*) to animals through the agency of house-flies which infested the open sores on mules in Panama. Laveran (1880) first suggested that oriental sore in Biskra might be due to transference of infection by flies, and Wenyon (1926) stated that it was highly probable that the house-fly, which swarms round

exposed oriental sores, especially in children, might sometimes carry the causative organism on its feet or proboscis to abrasions on the skin of another person. The same observer thought that leishmania bodies might pass rapidly through the gut of the fly and so be deposited with the dejecta.

Observations relating to non-biting haematophagous flies appear to be very few, probably from the fact that most observers have failed to distinguish the various species from *M. domestica*. It is apparent, however, from a study of their life-history and habits, that they are far more likely to be agents in the dissemination of blood-inhabiting protozoa than *M. domestica*. Patton recognized that the wounds produced by biting flies might be infected subsequently through the agency of non-biting blood-drinking muscids. His observations related to an Indian species named by Austen (1910) *M. pattoni*. Patton and Cragg also give a chapter on the haematophagous flies in their classical textbook, and emphasize their character and habits.

The Non-biting Muscid in Nyasa

In Nyasaland various species of these muscids abound, one in particular—*Musca spectanda* Wied—being, as recent work by W. A. Lamborn has shown, almost entirely dependent throughout its whole life on man. The eggs are laid solely on human excreta, on which the larvae feed to maturity. The adult flies, often in large numbers, especially in the early morning, settle on man, awaiting the opportunity to slake their thirst and deposit their eggs on his freshly excreted faeces. Swarms of non-biting haematophagous flies, including *M. spectanda*, may be found infesting abrasions and sores on domestic animals. They drink greedily the blood which oozes from the bites of *Tabanus, Stomoxys*, and other biting flies, and actually hustle them off in order to secure a meal. *M. spectanda* appears to be almost unique in the way in which it concentrates on man. It attacks persistently and with great determination scratches, wounds, open sores, tropical ulcers, yaw nodules, etc., and greedily drinks to repletion blood, serum, or secretions from the nose, eyes, or mouth. In one instance thirty-five *M. spectanda*, all females, were captured in three-quarters of an hour from a linear scab half an inch long on the dorsum of the foot of a native, when, despite the abundance of *M. domestica* in the neighbourhood, not a single specimen was included in the catch. Catches of fifty to sixty *M. spectanda* can be made readily within an hour in the early morning from the shoulders of any native.

These observations by Lamborn, and the hypothesis put forward by him (1932) concerning the part muscids may play in the spread, not only of trypanosomiases, but also of cutaneous leishmaniases, led to the experimental work described below, for which the senior author was largely responsible. As will be noted, the most important fact that has emerged is that this group of flies is capable of taking up and actively depositing blood-inhabiting protozoa and spirochaetes, either by regurgitating them from the proboscis or by passing them unchanged and alive in the excreta over a period of five to six hours.

Mechanical Transmission of *Trypanosoma brucei* through the Agency of *Musca spectanda*

In these experiments over 200 flies, both bred and wild, were used. The usual procedure was to feed them on blood exuding from a puncture of the ear of a dog or from the tail of a rat infected with *T. brucei*. A certain proportion of flies thus fed commenced in about five minutes to pass in their dejecta either pure blood or blood-stained fluid full of actively motile trypanosomes, while some flies continued to pass, at intervals, living trypanosomes for a period of at least six hours after an infective feed. A smaller proportion of flies were seen to blow a blob of blood containing living trypanosomes from their proboscis five or ten minutes after a feed.

Blood-stained excreta and regurgitation of blood were observed not only in the case of the flies fed on infected blood but in those fed on the normal blood of man and domestic animals and on other fluid material. The blood-passing capacity of various batches varied to a very marked degree. This variation may be associated possibly with the food requirements necessary for the maturation of the ova in the female.

Thus in one experiment twelve flies were fed on a dog infected with *T. brucei*, and although numerous drops of clear excreta were passed over a period of five hours in no instance was either blood or trypanosomes detected. This batch of flies was killed after five hours, and motile trypanosomes were seen in the gut of eight of them.

In another experiment seven out of twelve of the flies fed on a dog infected with *T. brucei* commenced to pass drops of blood-stained excreta in from five to ten minutes, and continued to excrete numerous drops for five hours. All these drops contained active trypanosomes. One fly also regurgitated a drop of blood from its proboscis full of active trypanosomes.

Over a period of five hours one fly passed forty-one drops of dejecta, another seventeen drops, and a third fifty-three drops, all of which were blood-stained and contained living trypanosomes. As an example of the extraordinary capacity of this muscid to deposit living trypanosomes in its excreta it may be stated that a batch of ten, fed to repletion on the blood of a dog infected with *T. brucei*, passed in six hours 265 droplets stained with blood and containing living trypanosomes.

In carrying out experimental infections flies, after a feed on *T. brucei*, were placed in specimen tubes covered with gauze, and the drops of excreta containing living trypanosomes passed on to the sides of the tube were drawn up into a capillary in saline or citrate solution.

Into one rat excreta containing trypanosomes was introduced intraperitoneally, infection duly taking place. A second rat was successfully infected by placing a drop of excreta on a small fresh cut on the ear, and a third rat developed an infection with *T. brucei* after a drop of the fly's excreta had been placed on a drop of blood exuding from a fresh puncture made by a tabanid, *T. fraternus* Ric.

From the experimental observations here recorded there cannot be any doubt that, apart from any mechanical transmission by the action of biting flies *per se*, the combined action of these and the non-biting blood-drinking species is capable of bringing about the transmission of trypanosomes under natural conditions. The presence of hordes of these flies, which persistently infest and annoy both man and other animals—especially when abrasions or sores are present—is a significant fact when it is realized that their capacity for distributing viable trypanosomes is so perfect. Their predilection for the mucous surfaces, moreover, suggests a means whereby infection with trypanosomes may take place. Experimental work to test the possibility of infecting rats through the eye, nose, and mouth by the excreta of these flies containing *T. brucei* was, however, unsuccessful.

Passage of Living Leptomonads of the Cultural Forms of *Leishmania donovani, L. infantum*, and *L. tropica* through the Intestine of *Musca spectanda*

Observations on visceral leishmaniasis indicate that this form of the disease has the same geographical distribution as sandflies of the *major* group—*Phlebotomus argentipes* in India, *P. chinensis* in China, *P. perniciosus* in Italy,

Malta, and Algeria, and *P. major* in Greece. Cutaneous leishmaniasis, on the other hand, occurs where *P. papatasii, P. sergenti,* or *P. caucasicus* are found.

The problem of the relationship of these flies to the transmission of leishmaniasis has been ably reviewed by Wenyon, and more recently by Adler, and it would appear that the entire mechanism of transmission through their agency requires further elucidation. It is a curious fact that out of numerous attempts to transmit leishmania through the bites of infected sandflies very few positive results have been obtained. Shortt, Swaminath, and Krishnan recorded one successful transmission of *L. donovani* to a Chinese hamster through the bites of sandflies, and more recently Napier, Smith, and Krishnan report further successes. The numerous negative results in transmission through the bites of these flies is not easily explained when it is considered that the Chinese hamster is a very susceptible animal. Napier, Smith, and Krishnan (1933) have shown that both the rounded tissue forms and the flagellate forms of *L. donovani* can produce infection in hamsters when introduced intraperitoneally, subcutaneously, percutaneously, orally, and conjunctivally. A very high proportion of infections was produced by both forms of the parasite by all the routes tested, and it was further shown that except by the conjunctival route the flagellate form was always the more infective.

It would seem that, apart from infection through the agency of sandflies, direct or mechanical transmission by non-biting haematophagous flies of both visceral and cutaneous leishmaniasis is possible. Considering the capacity of these flies for taking up blood or tissue parasites, it is difficult to conceive of a more ideal method whereby all species of leishmania can be distributed to abrasions or to the conjunctiva, mouth, or nose, especially as this group of muscids is so well represented in the countries where leishmaniasis is endemic. Oriental sores during ulceration can be a source of infection to the flies, and in kala-azar of man and the dog involvement of the cutaneous tissues allows haematophagous flies easy access to the leishmania bodies. Moreover, as it has been shown that viable leishmania occur in the faeces of man, it is quite possible that the flies could ingest them and pass them on as a result of the habits already described.

Experimental Observations.—In our opinion the following experiments point definitely to the fact that all the species of leishmania in man could be transmitted directly to healthy individuals by these flies, either through skin abrasions, or through the mouth or conjunctiva.

Cultures of *L. donovani* (three different strains) of Indian origin and cultures of *L. tropica* and *L. infantum* (dog strain) were obtained from the London School of Hygiene and Tropical Medicine and maintained in Nyasaland. About 250 *M. spectanda* were fed in groups on these cultures, almost invariably to repletion, and, as in the experiments with *T. brucei,* many of the flies passed living leptomonads of all three species in their excreta from five minutes up to a period of three hours afterwards. One insect, fed on a culture of *L. donovani,* passed, during a period of three hours, twenty-three droplets of excreta containing living flagellates, and during the first five minutes after feeding regurgitated from its proboscis a drop containing them alive. A second fly, fed on the culture of *L. tropica,* passed in the same time thirty-one drops, all containing active flagellates, and a third, fed on a culture of *L. infantum,* passed eleven drops containing living leptomonads; also within the same time.

Unfortunately, owing to the fact that it was impossible to obtain the rounded tissue forms of the various species of leishmania, experimental work to ascertain the viability of these in the fly was not carried out, but from the work on the viability of trypanosomes and the flagellate forms of leishmania, it would seem to be practically certain that these tissue forms would be readily passed viable in the dejecta of the flies over a period of several hours. It is hoped that an early opportunity may be made available to test this important point, as it is possible that during their sojourn in the gut of the fly some, at least, of the tissue forms may make an attempt to flagellate, especially if retained for several hours.

Passage of Living *Treponema pertenue* through the Gut of *M. spectanda*

In these experiments three cases of yaws were used, and about eighty flies, all of which were bred.

Before feeding the flies on the yaws sore, the presence of the causative organism was determined by dark-ground illumination and by staining. Two of the cases had spirochaetes numerous enough for easy detection after passage through the flies. The sores were then cleaned thoroughly to get rid of any surface pus, and the flies were allowed to feed on the exuding fluid. They did so greedily, and again a certain percentage commenced to pass fluid, which was found to contain living *T. pertenue.* In this experimental work the spirochaetes were only detected up to a period of one hour after a feed. Lack of time prevented a fuller determination of the period they will remain viable in the excreta of the flies.

Flies could infect any breach of the surface of the skin either through their dejecta or by regurgitation, as already indicated in the previous paragraphs. In this connexion it is significant that primary yaw sores have been recorded as arising not infrequently on such sites.

Summary

1. Non-biting haematophagous muscids feed readily to repletion on blood, serum, serous exudate, ulcers, sores, and also secretions from the nose, eyes, and mouth. After a meal a certain proportion of these flies pass blood or serum in their numerous dejecta, which may contain large numbers of living trypanosomes, leishmania, or the *Treponema pertenue* of yaws.

2. These haematophagous flies have their preferred hosts—for example, *Musca spectanda* Wied, which occurs in great abundance in Nyasaland, favours man. It lays its eggs exclusively in human faeces, breeding very freely; it derives moisture from human faeces, and could thus take up *L. donovani* from this source, since the organism is known to occur sometimes in this medium. Large numbers attack persistently and with determination scratches, cuts, and sores of the skin of man in search of food, and also haunt the eyes, nose, and mouth in search of fluid.

3. *Trypanosoma brucei* in the blood of rats and dogs are readily ingested by *M. spectanda,* and during a period varying between five minutes and six hours these flagellates can be passed alive in the numerous droplets of dejecta passed through the gut of the fly. Rats were experimentally infected by the intraperitoneal injection of these dejecta by placing a drop on a fresh cut on the ear and by placing the dejecta on a drop of blood exuding from the bite of a tabanid. *T. brucei* in the dejecta introduced into the eye, nose, and mouth did not produce infection. Certain flies after a feed extrude a drop of the ingested blood containing living trypanosomes from their proboscis five to ten minutes after a full meal.

4. Living leptomonads in cultures of *L. donovani, L. infantum* (dog strain), and *L. tropica* are freely ingested by *M. spectanda,* and are passed viable in the droplets of excreta for several hours after a feed. There can be no doubt that these flies could ingest the round tissue forms of all the human forms of leishmaniasis and pass them in a viable state either through the gut or by regurgitation from the proboscis to sores or mucous membranes. It would seem certain that both kala-azar and oriental sore could be actively transmitted through the agency of these flies.

5. *Treponema pertenue* of yaws passes rapidly in a viable form through the gut of *M. spectanda,* and so could easily be deposited on cuts and abrasions.

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THE POST-OPERATIVE COMPLICATIONS AND RESULTS OF TONSIL AND ADENOID OPERATIONS IN CHILDREN*

BY

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This clinical investigation into the post-operative complications and results of tonsil and adenoid operations on children under 14 years of age was suggested by Dr. J. S. Fraser, surgeon, ear, nose, and throat department of the Royal Infirmary, Edinburgh.

Source of Material

1. *Hospital Patients* (1,457 cases).—These cases were operated on as out-patients in the three years 1927–9 inclusive in Dr. J. S. Fraser's department. Out of the 1,457 hospital out-patients 1,138 reported at the Royal Infirmary, and 315 were visited at their homes by the hospital social service. The post-operative complications were considered in all the cases, but only in 1,138 of them were the operation results noted.

2. *Private Practice* (900 cases).—These patients were operated on in private by Dr. J. S. Fraser and Dr. W. T. Gardiner during the ten-year period 1919–28.

The following points were ascertained from the parents of each out-patient who reported, and by means of a questionary sent to each private patient's doctor: (*a*) occurrence of any post-operative complications; (*b*) disappearance of the preoperative symptoms; and (*c*) condition of the general health since operation.

The following routine is adopted in Dr. J. S. Fraser's department as regards the out-patient operations on children under 14 years of age. Only those who live within a radius of three miles from the Infirmary are operated on as out-patients. Exceptions are admitted as in-patients—namely, (*a*) very delicate children, or children with some complication requiring observation (for example, acute suppurative otitis media), and (*b*) patients living in overcrowded or unsuitable houses. The parent is given full written instructions as to the pre-operative preparation and post-operative care of the patient. The clinical assistants give the anaesthetics and do the operations (tonsil guillotine enucleation and removal of adenoids by curettes) under the supervision of the clinical tutor. When the haemorrhage has ceased the patients are put to bed in a ward for three or four hours after the operation. A clinical assistant examines each patient's throat before the parents take the child home in a taxi.

* Read in opening a discussion in the Section of Oto-rhino-laryngology at the Annual Meeting of the British Medical Association, Bournemouth, 1934.

Statistics

Preoperative examination of 1,138 hospital cases gave the following results:

Enlarged tonsils and adenoids	1,109 cases
Enlarged tonsils, no adenoids	10 ,,
Adenoids only (tonsils previously removed)	19 ,,
	1,138

There was a previous history of a peritonsillar abscess in three cases, and a fourth patient presented himself for operation, but owing to the existence of a peritonsillar abscess his tonsil was not removed.

Operations in the 1,138 hospital and in the 900 private cases were as follows:

	Hospital	Private
Tonsils and adenoids removed	1,089	825
Tonsils only	10	0
Adenoids only	39	75
	1,138	900

Results of tonsil and adenoid operations in the private and hospital cases:

Tonsils	Hospital per cent.	Private per cent.
Complete enucleation	80.3	97.0
Incomplete enucleation	19.0	3.0
Results unascertained (refused examination)	0.7	—

Complete enucleation of one tonsil with the guillotine and dissection of the other was done in eleven of the private cases.

Adenoids	Hospital per cent.	Private per cent.
Complete removal	81.8	99.5
Adenoids remains	17.5	0.5
Results unascertained (refused examination)	0.7	—

The above percentages of incomplete tonsil and adenoid operations are somewhat high in the hospital cases, but these operations were done and the anaesthetics given by thirty-three successive clinical assistants.

Post-operative Complications

The material reviewed below comprises 1,457 hospital and 900 private patients.

HAEMORRHAGE

In all cases, to safeguard against avoidable haemorrhage, a careful inquiry was made as to any tendency to haemorrhage—for example, from an ordinary wound or tooth extraction. If the patient was known to be a haemophiliac the coagulation index of the blood was ascertained and appropriate preoperative treatment adopted. In the groups of hospital and private patients under consideration there was no case of congenital haemophilia.

Attention to some points in the preoperative preparation and immediate post-operative treatment of the patients is productive of quick haemostasis. They are: (1) preliminary injection of atropine sulphate, (2) short ethyl chloride anaesthesia, (3) the use of a blunt tonsil guillotine and sharp adenoid curette, and (4) immediate post-operative treatment: this consists of sponging the face and neck with ice-cold water, and the adoption of the sitting position when the patient has recovered from the anaesthetic.

It should be noted that the age of the children is important, as under 14 years severe haemorrhage occurs less frequently than in older children.

Reactionary Haemorrhage.—Out of 1,457 hospital cases sixteen (slightly over 1 per cent.) had some reactionary

haemorrhage; this was slight in fifteen patients, but severe in one. In all cases the haemorrhage stopped spontaneously. Out of 900 private patients reactionary haemorrhage occurred in ten cases (1.1 per cent.). This was slight in eight (one from adenoids only) and severe in two, requiring special treatment to arrest it.

Secondary Haemorrhage.—In the hospital series fourteen cases (1 per cent.) of secondary haemorrhage were reported. This was slight in eleven cases and severe in three. Two of the latter were admitted to the Royal Infirmary, and one of them required special treatment to arrest the haemorrhage. The onset of the haemorrhage occurred on or between the second and seventh days after the operation. This is important, as hospital in-patient tonsil and adenoid cases are usually detained in hospital for only forty-eight hours. In the private series secondary haemorrhage was slight in one case (0.1 per cent.).

Thus we see that while in the private patients two cases of severe reactionary haemorrhage occurred, in the hospital there were three cases of severe secondary haemorrhage. No case of collapse or shock occurred from haemorrhage. The tendency to bleed shown in the above thirty hospital cases could not be credited entirely to partial removal of tonsils and adenoids, for later examination showed that in eighteen cases the operation was complete, while in only five cases were the tonsils incompletely enucleated and in seven there was still some adenoid tissue present.

AURAL SYMPTOMS AND COMPLICATIONS

Earache.—Fifty hospital patients (3.4 per cent.) and twenty-five private patients (2.8 per cent.) complained of post-operative bilateral earache. The earache was probably a reflex otalgia from the operation area, via the glosso-pharyngeal nerve. Analysis of the preoperative histories of these cases showed that six of the private patients had preoperative pathological aural conditions predisposing them to attacks of earache—for example, one had scars in the tympanic membranes, four had previously had acute suppurative otitis media, and one had had a left Schwartze operation. In addition, two had previously suffered from earache.

Acute suppurative otitis media occurred shortly after operation in one private patient (0.1 per cent.), as compared with twenty-two hospital patients (1.5 per cent.); in half of them it was unilateral, in half bilateral. In the preoperative histories of these twenty-two patients the following factors had predisposed to an acute otitis media. Ten cases had complained of frequent colds, two of earache, and twelve of deafness. Of the latter, four had catarrhal otitis media and one had scars in the tympanic membranes. In the post-operative examinations another factor was revealed as influencing the incidence of otitis media after operation—namely, the incomplete character of the operation. In six cases the tonsils were enucleated incompletely, and in nine cases remains of adenoids were still present. The end-result in fifteen of the nineteen cases examined was cessation of the otorrhoea within fourteen to twenty-two days. Three cases went on to chronic suppurative otitis media, and one case had recurring attacks of acute suppurative otitis media. On examination, it was found that the perforations in the tympanic membranes had healed in fifteen cases, and persisted in four cases in the following positions: two central, one anterior, and one posterior.

SEPTIC THROAT

In the hospital patients there were four cases (0.22 per cent.) of septic inflammation of the throat with pyrexia and local inflammatory changes on the tonsillar fossae. No similar condition occurred in the private patients.

NASAL CATARRH

There were twenty-six hospital cases (1.8 per cent.) in which nasal catarrh supervened on the operation. In twenty-five of these it lasted only four days, but in the remaining case it developed into a chronic nasal catarrh lasting for a few months; five months after operation there was no macroscopic pathology in the nose, and an *x*-ray film of the nasal accessory sinuses showed no comparative obscurity; the patient had recovered. There was post-operative nasal catarrh in only two (0.2 per cent.) of the private patients. These children had previously complained of frequent colds, mouth-breathing, and deafness. In both cases the ultimate result of the operation was satisfactory, and all the preoperative symptoms were cured.

PARESIS OF SOFT PALATE

In the hospital series there were eight cases (0.5 per cent.) of paresis of the soft palate. All complained of difficulty in swallowing and of fluids regurgitating through the nose; six of them were very ill and feverish. All cleared up spontaneously within seven or eight days. The soft palate was injured in one private case (0.1 per cent.) at operation. Recovery was slow, but the symptoms gradually disappeared.

TORTICOLLIS

There were five hospital cases (0.35 per cent.) of torticollis. All recovered; four were well in three days, but one patient had a stiff neck for three weeks, which eventually cleared up with special treatment. No private patient suffered from this symptom.

CHEST SYMPTOMS AND COMPLICATIONS

Cough, lasting for a few days after operation, without pain, sputum, physical signs, or constitutional disturbance, occurred in twenty-six hospital patients (1.8 per cent.). No pulmonary complications occurred in the private cases. There were five cases of pulmonary disease among the hospital patients (0.35 per cent.). All recovered, the bronchopneumonia within six weeks, and the other cases within three weeks. The operation had been done completely in all. These cases are briefly summarized below.

Pneumonia: Case 1.—Female, aged 5 years, following operation on 12/1/28 developed a right upper lobar pneumonia: recovery complete. Case 2.—Female, aged 9 years, after operation on 9/11/29 developed pneumonia: recovery.

Bronchopneumonia: Case 3.—Bronchopneumonia, occurred in a male aged 8 years; operation on 4/7/29: recovery.

Pleurisy: Cases 4 and 5.—Two cases of pleurisy (one aged 8 and the other 10 years) occurred following operation on 25/6/27 and 29/8/29 respectively: recovery.

SEPTIC RASH

Septic rash occurred in one case (0.07 per cent.). Previous to operation this patient had a follicular tonsillitis, so that a good deal of infection was present. The septic rash appeared four days after the operation, and disappeared after a purgative was administered. No case of septic rash occurred in the private patients.

SEPTICAEMIA, TOXAEMIA, AND PYREXIA

There was one hospital case of septicaemia after operation. He made a good recovery within three weeks. No case of septicaemia occurred in the private patients.

Toxaemia, due to toxic absorption from the operation areas, occurred in two private cases (0.2 per cent.). Both patients were in a nursing home for four days, and had a rise in temperature for some days after returning home.

Pyrexia, due to persisting preoperative cervical adenitis, occurred in two private cases (0.2 per cent.). Operation

was done while the glands in the neck were inflamed, and fever persisted for two to five days after operation. No similar case was noted in the hospital patients.

ACUTE APPENDICITIS

There was one hospital case (0.07 per cent.) of acute appendicitis with general peritonitis. The patient was feverish for two days and remained in bed for four days after the tonsil operation. Exactly three weeks after the operation she was admitted to the Royal Infirmary and operated on for acute appendicitis with general peritonitis: no concretions were present. She made a good recovery. Acute appendicitis developed in one private case (0.1 per cent.): the patient recovered.

MENINGITIS

One case of meningitis was reported (0.07 per cent.). This patient died in the Sick Children's Hospital fourteen days after the tonsils and adenoids had been removed. The patient had been born prematurely, and was a delicate child. Pathological report on the tonsils: "No tuberculous infection." No similar case occurred in the private patients.

ACUTE OSTEOMYELITIS

Acute osteomyelitis of the femur occurred in one private patient (0.1 per cent.). After operation by a general surgeon the trouble eventually cleared up. No similar case occurred in the hospital patients.

EXANTHEMATA

Scarlet Fever.—Seven hospital patients (0.47 per cent.) developed scarlet fever within five days after operation, so that the infection may have occurred just prior to the operation. It is more probable, however, that they were cases of surgical scarlet fever. Two of these patients had complications: one had acute nephritis and the other purulent rhinitis: both recovered satisfactorily. One private patient (0.1 per cent.) developed scarlet fever after removal of adenoids: the patient recovered.

Pertussis.—One hospital patient, immediately after her operation, developed whooping-cough; this she must have been incubating.

Diphtheria.—In hospital patients two cases of diphtheria after operation were reported to the social service worker. The patients recovered.

There were thus ten cases of infectious fever in the hospital cases (0.68 per cent.), as compared with one (0.1 per cent.) in the private patients.

GENERAL DEBILITY

There were four hospital cases of general debility after operation. They all made good recoveries within seven to fourteen days. No similar case occurred in the private patients.

STATUS LYMPHATICUS AND DEATH UNDER ANAESTHETIC

There was one case of this. A male patient, aged 7 years, was anaesthetized with ethyl chloride, administered by the closed method with a Guy's ethyl chloride inhaler. As the left tonsil was being guillotined the patient stopped breathing; the tonsil was removed, the mouth gag was closed, and the child breathed again. The right tonsil was now removed, and again the patient stopped breathing. Respiration, however, did not return. The adenoids were not touched. All the ordinary methods of resuscitation were resorted to, but without success. At the post-mortem the appearances were those of a case of status lymphaticus. Beyond the great hyperplasia of lymphoid tissue found throughout the body there was nothing which would indicate any cause of sudden death. The thymus gland was enlarged, and weighed 43 grams. (The approximate weight of the normal thymus between the ages of 5 and 10 years is 23 grams.) In the preoperative history of this patient there was nothing to suggest a lymphatic diathesis, and consequently his enlarged thymus was not investigated clinically before operation.

The following table shows the incidence of the post-operative complications in the two groups of cases—hospital and private patients. For comparison, J. A. Keen's figures for 9,344 cases (1921–30) are given in the last column.

	Hospital (1,457)	Private (900)	Keen's (9,344) Cases
Haemorrhage:			
Reactionary	16 (1.0) per cent.	10 (1.1) per cent.	110 (1.2) per cent.
Secondary	14 (1.0) ,,	1 (0.1) ,,	58 (0.6) ,,
Aural complications:			
Earache	50 (3.4) ,,	25 (2.8) ,,	— —
Acute suppurative otitis media	22 (1.5) ,,	1 (0.1) ,,	60 (0.6) ,,
Mastoid abscess and intracranial infection	— —	— —	6 (0.06) ,,
Septic throat	4 (0.22) ,,	— —	— —
Nasal catarrh	26 (1.8) ,,	2 (0.2) ,,	— —
Paresis of the soft palate	8 (0.5) ,,	1 (0.1) ,,	— —
Torticollis or stiff neck	5 (0.35) ,,	— —	— —
Cough	26 (1.8) ,,	— —	*
Pneumonia	2 (0.13) ,,	— —	13 (0.14) ,,
Bronchopneumonia	1 (0.07) ,,	— —	5 (0.05) ,,
Pleurisy	2 (0.13) ,,	— —	— —
Septic rash	1 (0.07) ,,	— —	— —
Septicaemia	1 (0.07) ,,	— —	5 (0.05) ,,
Toxaemia	— —	2 (0.2) ,,	1 in 20 or 30
Cervical adenitis ...	— —	2 (0.2) ,,	5 (0.05) ,,
Acute appendicitis ...	1 (0.07) ,,	1 (0.1) ,,	— —
Meningitis	1 (0.07) ,,	— —	— —
Acute osteomyelitis...	— —	1 (0.1) ,,	— —
Scarlet fever	7 (0.47) ,,	1 (0.1) ,,	18 (0.18) ,,
Whooping-cough ...	1 (0.07) ,,	— —	1 (0.01) ,,
Diphtheria	2 (0.13) ,,	— —	3 (0.03) ,,
General debility ...	4 (0.27) ,,	— —	— —
Status lymphaticus...	1 (0.07) ,,	— —	— —
	13.02 per cent.	5.3 per cent.	

* Keen gives the figure 5 (0.05 per cent.) under the heading "bronchitis."

Physical Examination following Operation

The material reviewed below comprises 1,138 hospital out-patient cases. Where information is available the results in the 900 private patients are also given.

FAUCIAL PILLARS AND SOFT PALATE

The pillars of the fauces showed scarring in 753 cases, and one or both pillars had been removed altogether in a few instances. The palate was scarred and drawn tightly across the fauces in three cases. The uvula had been removed in seven cases.

LYMPHOID TISSUE IN OROPHARYNX

Granular pharyngitis with distinct lymphoid nodules on the posterior pharyngeal wall was present in 463 cases; these patients had no subjective symptoms. Before operation the condition was noted as being present in only forty-seven cases. The lymphatic tissue in the lateral pharyngeal bands was hypertrophied in 473 cases: in one case there was a follicular lateral pharyngitis. Previous to operation the lateral pharyngeal bands were noted as

enlarged in only two cases. The lingual tonsil was enlarged in six cases; in one of these the lingual tonsil was enormously hypertrophied. Post-operative examination was carried out in each case at periods varying from some months up to three years after the tonsil and adenoid operation. The whole picture showed the tendency to compensatory hypertrophy of lymphoid tissue in the oro-pharynx, and suggested that the presence of lymphoid tissue is necessary for the well-being of these young patients. (Digby considers that lymphoid tissue plays a large part in the production of acquired immunity.)

CERVICAL ADENITIS

In the hospital patients the tonsillar lymph glands were found to be enlarged before operation in 526 cases (on both sides in 507 and in the remaining nineteen cases on one side only). At the post-operative examination, carried out in each case at periods varying from some months up to three years after the tonsil and adenoid operation, the glands were still enlarged in 53 cases, markedly so on both sides of the neck in two cases, and on one side of the neck in four cases. Excision of the enlarged cervical glands was carried out in two cases. The tonsils were examined histologically in thirty-one of the 526 cases, but tuberculous follicles were found in only five cases. In the private patients prior to operation eleven had cervical adenitis, one of whom had discharging sinuses in the neck following incision. After operation the infected sinuses in this case continued to suppurate. The enlarged glands in the neck subsided in three cases and persisted in seven cases after operation.

STATE OF TYMPANIC MEMBRANES

In the hospital patients the tympanic membranes presented the following characteristics on examination made, in some cases, a few months, in others one, two, or three years after the operation.

	Right	Left
Normal tympanic membranes ...	46	44
Retracted tympanic membranes ...	1,032	1,036
Perforated drumheads	44	42
Ears not examined	16	16
	1,138	1,138

In the cases with normal tympanic membranes the adenoid operation was complete in thirty-four cases (74 per cent.), and in those with retracted tympanic membranes the adenoid operation was complete in 912 (88 per cent.). It is of considerable interest that patients, examined at varying lengths of time after operation, should present such an enormous number of retracted tympanic membranes. Some were slightly retracted, some markedly retracted, and some so much indrawn that they were in contact with the inner tympanic wall, outlining the promontory and showing the incudo-stapedial joint as an outstanding prominence. As these cases do not show the expected result—namely, the re-establishment of the air equilibrium in the middle ear and external meatus—it is apparent that a course of politzerization or Eustachian catheterization is frequently necessary after adenoid operations to re-establish the normal air pressure within the tympanum.

ACUTE AND CHRONIC OTITIS MEDIA

Below is discussed the effect of the operation on pre-operative acute and chronic suppurative otitis media.

Acute Otitis Media.—At time of operation twenty-six cases (thirty-one ears) were suffering from acute otitis media; of these, twenty-one were unilateral and five bilateral. The tympanic membranes in eight ears were red and bulging, but not perforated. In the remaining twenty-three ears there was a perforation in the tympanic membrane in the following positions: anterior perforation, twelve; central perforation, seven; posterior perforation, one; site unknown, three. Of the thirty-one ears so affected before operation, twenty-nine cleared up within a few days or weeks after operation. These included the eight cases without perforation of the tympanic membrane and one which required paracentesis six days after operation. In the two remaining cases the otorrhoea persisted; in one the perforation was central and in the other anterior.

Chronic Suppurative Otitis Media.—At the time of operation seventy patients (in all 89 ears) suffered from chronic suppurative otitis media—fifty-one unilateral and nineteen bilateral. After operation otorrhoea ceased in fifty-five ears (62 per cent.) within a period of two weeks up to five months; the perforations in the tympanic membranes healed in thirty-eight (43 per cent.) of these, but persisted (dry perforation) in seventeen (19 per cent.). Otorrhoea continued in thirty-three ears (37 per cent.); in two a Schwartze operation had been performed previous to the tonsil and adenoid operation. The remaining patient had a radical mastoid operation two and a half years after the tonsil and adenoid operation.

On examination of the ears in this group the position of the perforation and the pathological condition of the tympanic membranes were as follows:

	Dry Ears	Running Ears
Anterior ...	18 (12 perforations healed)	.. 11 (6 with granulations)
Central ...	18 (11 „ „)	... 9 (6 „ „)
Posterior ...	10 (7 „ „)	... 4 (2 „ „)
Posterior marginal .	5 (4 „ „)	... 7 (6 „ „)
Site unknown	4 (4 „ „)	... 2
	55	33

At the time of the tonsil and adenoid operation there were seven cases of healed chronic suppurative otitis media. In one of these recurrence took place after operation. The effect of the adenoid operation on acute and chronic suppurative otitis media, considered in relation to the position of the perforation in the tympanic membrane, was that in cases with anterior perforations otorrhoea ceased in 71 per cent., with posterior perforations in 73 per cent., with posterior marginal perforations in 41.6 per cent., and with central perforations in only 29.4 per cent. On the whole, the results obtained by operation in cases of otorrhoea may be regarded as satisfactory.

PERSISTENCE OF SYMPTOMS AFTER OPERATION

The beneficial effect of the operation on the local symptoms is illustrated in this series of hospital cases by their disappearance in the great majority of the patients.

Throat Symptoms.—Attacks of sore throat occurred in 635 cases before operation, but only in thirty after operation. Choking sensation and difficulty in swallowing occurred in twenty-two cases: all were cured by operation. Cough persisted in eighteen out of forty patients after operation. Thick speech noted in thirty-eight cases remained the same in eighteen after operation. Patients complaining of lisps, stuttering, and hoarseness were not improved by operation. Three hoarse patients had singers' nodes on the vocal cords.

Nasal Symptoms.—Snoring, present in 798 patients before operation, persisted in only fifty-eight: of 408 mouth-breathers all but seventy-five were cured. Nasal catarrh and frequent colds in 629 patients continued to recur in 313. Epistaxis in fifteen cases was cured.

Aural Symptoms.—A marked improvement occurred in these. Deafness in 161 cases was cured in all but twenty-three, despite the indrawing of the drumhead. (Eleven deaf-

mutes were operated on for enlarged tonsils and adenoids, but were, of course, not benefited as regards their hearing.) Attacks of earache recurred in forty-five out of 152 cases after operation. Tinnitus in two patients (aged 8 and 12 respectively) disappeared. Acute suppurative otitis media healed in twenty-nine out of thirty-one cases, and chronic suppurative otitis media healed in fifty-six out of eighty-nine cases.

Patients complaining of headache (fifteen) and nocturnal enuresis (two) were not improved.

General Summary of Results in 1,138 Hospital Patients

The local symptoms for which the operation was recommended were completely cured in 851 (75 per cent.), partly cured in 204 (18 per cent.), but persisted in eighty-two (7 per cent.).

There was a marked improvement in general health in 982 (86.4 per cent.), but no improvement in 139 (12.2 per cent.). There were seventeen cases (1.4 per cent.) examined three weeks after operation—that is, too soon to estimate improvement in general health.

Discussion and Summary

On reviewing the post-operative symptoms and complications one sees that their total percentage is higher in the hospital patients (13.02 per cent.) than in the private patients (5.3 per cent.). If we exclude symptoms—for example, earache and cough—and complications—such as, exanthemata—we find that the percentage of 7.54 for complications in the hospital patients still remains higher than in the private patients (2.2).

The difference between the two figures can be accounted for as follows: (*a*) Some inherent factor is probably present in the preoperative condition of the hospital patients. Their general nourishment and constitution are, as a rule, inferior to those of the private patients, while in this hospital series several patients had predisposing factors in the causation of aural complications, and a number of them were possibly operated on in the prodromal stages of the exanthemata. (*b*) The results of hospital operations carried out by junior operators are not so good as those done by experienced surgeons in private practice. (*c*) Complications may be due to chill on the journey home in a taxi after operation; this was a possibility in the five cases of pulmonary complications, though the aspiration of septic blood clot during the operation—for example, in the case of bronchopneumonia, or of septic embolism from the operation area, as in the atypical case of pneumonia (right upper lobe) and in the two cases of pleurisy—cannot be excluded. No lung complication occurred in the private cases. (*d*) The only case of death after discharge from the Royal Infirmary was the case of meningitis. (*e*) No complication was found due to neglect of the parents to carry out written instructions given them for the pre-operative and post-operative care of the children.

In this series of hospital out-patients, for whom every precaution was taken as to the general state of their health, their preoperative preparation, conveyance from the Infirmary to their homes, and the suitability of their homes for convalescence, the total percentage of complications was rather more than twice as high as that in the private cases. Considering the nature of some of the complications recorded in hospitals—for example, temporary torticollis, paresis of the soft palate, and nasal catarrh—the difference in the percentages is hardly of sufficient importance to make us condemn the present out-patient operation system and recommend hospital authorities to provide beds for all tonsil and adenoid cases. One acknowledges that the ideal post-operative treatment for these cases would be to detain the patient in hospital for at least forty-eight hours after the operation, but even with this precaution complications may occur. In support of this there are the statistics published by J. A. Keen in the *Journal of Laryngology* (January, 1932) in an article entitled "Medical and Surgical Complications of Tonsillectomy in Childhood." In his series of 9,344 cases each patient was kept in hospital for at least twenty-four hours after operation; sixty-six cases (0.66 per cent.) of aural complications occurred, consisting of sixty cases of acute suppurative otitis media and six cases of mastoiditis (including three deaths from this cause), as compared with our twenty-two cases (1.5 per cent.) of acute suppurative otitis media (no mastoiditis, and no deaths) in the Edinburgh hospital cases. Further, there were five cases of septicaemia (0.05 per cent.), including one death, in Mr. Keen's group, as compared with one case (recovery) (0.07 per cent.) in the Edinburgh group.

I wish to thank Dr. J. S. Fraser and Dr. W. T. Gardiner for allowing me to use the records of their private patients; also to acknowledge my indebtedness to Dr. J. S. Fraser and Dr. Logan Turner for their interest in, and helpful criticism of, this paper. Finally, I should like to thank Miss Watt and other members of the Royal Infirmary of Edinburgh Social Service Department for the records they obtained for me of cases which did not report for examination.

PULMONARY TUBERCULOSIS IN ASTHMA CASES

BY

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Among 522 cases of asthma seen in recent years there were 369 which I have investigated with a uniform method between 1930 and 1932—200 men and 169 women of the working class in active employment. In all of these cases a detailed examination was made both by clinical and *x*-ray methods for any signs of active or healed tuberculous lesions in the lungs (E. Fraenkel[1]).

Evidence from the Literature

The view that asthma and pulmonary tuberculosis are mutually exclusive is widespread in this country as well as abroad. Regarded from the statistical point of view there is undoubted justification for this attitude. The work of Schroeder,[2] for example, shows that out of 4,716 cases of pulmonary tuberculosis only thirty cases showed typical symptoms of asthma. Kaemmerer,[3] an experienced German clinician, considers that tuberculosis plays no part in the genesis of asthma. Bandelier and Roepke[4] believe that asthma may produce some immunization against the disease. In support of this we have the observation that tuberculous guinea-pigs appear to be protected against horse-serum shock; this is explained by Pagel[5] as due to diminution of antibody formation, which is dependent on the number of tuberculous foci. In conjunction with Pulvertaft[6] I have recently been able to show that a similar protection may be obtained by massive and repeated injections of Calmette's B.C.G. On the other hand, a single dose or the injection of dead or damaged B.C.G. was ineffective, and did not produce a local lesion. These results would seem to support in some degree the hypothesis of Pagel.[5]

Such authors of standing as Liebermeister,[7] Krez,[8] Zdansky,[9] and Wernscheid,[10] however, insist that the majority of asthma cases are of tuberculous origin. Harkavy and Hebald,[11] working at the Mount Sinai Hospital, report in a series of 400 asthma cases over 10 per

cent. as being tuberculous. Among these 400 cases eighteen were examined very thoroughly by the x rays, and seventeen of these showed cavities. In 1912 I[12] observed a case of bronchial asthma in which a tuberculous bacillaemia could be demonstrated by animal injection. Two cases of Kenner[13] and Loewenstein in 1931 gave similar results. Further evidence of a relationship between these conditions is presented by the demonstration of a filterable tuberculous virus in a case of asthma by Sergent and Kourilsky.[14] Jimminez Diaz[15] is of opinion that tuberculous allergy may bring about asthma, and later there may ensue a hypersensitiveness to other substances. On the other hand, Tauzk[16] is of opinion that asthma may predispose to tuberculosis. That tuberculosis is activated and accelerated by asthma is held by Lueg.[17] Opposed to this is the statement by Schroeder[18] that frequently in cases of coexisting asthma and tuberculosis the latter is of the slow and relatively unprogressive kind. The classical work of the late Professor von Pirquet[19] has made us familiar with the allergic phenomena associated with tuberculous infections. We are thus always faced with the possibility that this sensitization may be extended to other allergens.

Apart altogether from the theoretical significance of the simultaneous appearance of the two conditions, there can be no doubt, as has been shown by my own investigations,[1] by Eichhoff,[20] and by Hamann[21] working at my suggestion, that a careful investigation and assessment of a large number of asthma cases will reveal the presence of active, even cavernous, tuberculosis in some of them. Hamann has reported on eight of my cases with asthma and active tuberculosis, of which two died and two others developed tuberculosis within two years. The facts which I wish to present here are of a similar nature to those of these two authors, except that they rest upon a considerably larger material.

Results of Investigation

The 369 cases of my series were all sent to me with the diagnosis of bronchial asthma by medical men, among whom were specialists in pulmonary diseases. Investigation showed that, of these, sixteen patients had active tuberculosis. They could be classified as follows: four of open tuberculosis with demonstrable bacilli in the sputum; four others having cavities without demonstrable bacilli, and eight others with active tuberculosis both clinically and roentgenologically. Of the sixteen only one case had been sent with the diagnosis of asthma and tuberculosis. In addition to this we found in twenty-six other cases definite evidence roentgenologically of productive cirrhotic inactive tuberculosis. Finally, twenty further cases showed healed lesions. That is to say, that of the 369 asthma cases sixty-two (16.7 per cent.) showed signs of present or past tuberculous infection.

Pulmonary Tuberculosis in Cases of Bronchial Asthma

	Males (200)	Females (169)	Total (369)
Open tuberculosis	3 } 10* (5 %)	1 } 6 (3.5 %)	4 } 16 (4.3 %)
Active tuberculosis	7 }	5 }	12 }
Inactive tuberculosis	17 (8.5 %)	9 (5.3 %)	26 (7.0 %)
Healed tuberculosis	17 (8.5 %)	3 (1.75 %)	20 (5.4 %)
Total cases ...	44 (22 %)	18 (10.5 %)	62 (16.7 %)

* 4 had cavities.

Discussion

The epidemiological importance of tuberculosis undiagnosed on account of the concurrent symptoms of asthma is at once obvious. In two instances a suggestive history was obtained. In one the undiagnosed patient's wife developed tuberculosis of the eyes, and in another two children had tuberculous meningitis and pulmonary tuberculosis. Eichhoff[20] and Hamann[21] have also drawn attention to this danger, and there can be little doubt that it merits our serious attention. It would appear also—and I shall give an example of this—that a tuberculosis may become established after asthma alone has been recognized. Of course, the asthma may, as a result of an allergic predisposition, be at first monovalent, later becoming polyvalent. The possibility of a secondary hypersensitiveness to tuberculous allergens now arises. Thus, a chemist's assistant who possessed a sensitization to sodium salicylate with typical asthma later developed under our observation a rapidly progressive exudative tuberculosis with persistence of the asthmatic picture. That this patient had previously been completely free from tuberculosis there could be no doubt. Another case was that of a medical man who had had asthma practically all his life and became infected with tuberculosis whilst working in the tuberculosis department of a hospital. This infection led to cavity formation, and after treatment at Davos was followed by healing. The investigation of this asthma case is still continuing. On the other hand, the history of the patient frequently shows an "influenza" infection or a catarrh of the apex. In some of such cases there is found an inactive tuberculosis, which can only be demonstrated by the x rays.

The most important aspect of these observations is the fact that an active and open tuberculosis can be concealed for a lengthy period under the guise of a bronchial asthma with both eosinophilia and skin reactions against specific proteins.

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E. J. Canal Feijoo (*Rev. Med. Latino-Americana*, June, 1934), writing from the province of Santiago del Estero, draws attention to anomalous forms of leishmaniasis met with in his region and not described before. As they differ so widely from the ulcerative, impetiginous, ecthymoid, nodular, verrucous, framboesic, and non-ulcerative varieties, of which many observers have written, he considers them as constituting a true morbid entity, even though they are caused by the same germ. In great detail, and illustrated by a wealth of excellent photographs, he describes these indigenous forms as trichophytoid, erythemato-pigmentous, oedematous, and mucous, and gives the history of the evolution of each. From his communication it may be concluded that kala-azar, like other diseases, assumes aspects which differ in various regions owing to the influence exerted upon the germ by different telluric, climatic, and meteorological conditions.

Clinical Memoranda

UNREDUCED OCCIPITO-POSTERIOR PRESENTATION WITH SHORT CORD

The following account of a recent personal case seems of sufficient interest to be recorded.

The patient, aged 23, and formerly a typist, started labour at 6.30 p.m. two days after the estimated date. Abdominal palpation suggested an occipito-posterior position. At 4 a.m. on the following day dilatation was complete, the membranes ruptured, and the child's head descended lower in the occipito-posterior position. At 5.10 a.m. the presenting portion of the head was visible at the vulva. The pains were good, but not frequent, and the head could be observed rotating into the occipito-anterior position. When rotation was complete, the head was born at 7 a.m. With a sudden movement—almost amounting to a jerk—the head at once returned to its former occipito-posterior position, and there was no further progress in the birth. Considerable traction was necessary before the shoulders were born, and the anterior arm had to be completely extracted first. There being again no further progress, the head was pushed on to the mother's abdomen and steady traction was required to secure birth of the legs. An abnormally short umbilical cord was then discovered, which had prevented rotation of the child's body. This had to be divided with the child's abdomen pressed closely against the mother's vulva. Apart from the need for three perineal stitches and the subsequent occurrence of a slight prominence of the child's umbilicus, there were no ill effects from the tension on the cord. The third stage was normal, being accompanied by considerably less bleeding than is usual. The weight of the child was 7½ lb. Unfortunately no actual measurement of the cord was made.

London, S.W.11. F. P. N. PARSONS, M.B., M.M.S.A.

BILATERAL RUPTURE OF THE TENDON OF EXTENSOR POLLICIS LONGUS

In the literature at my disposal I can find no reference to a case of bilateral rupture of this tendon from any cause. It seems, therefore, that a record of the case might be of interest.

On March 5th, 1932, a motor mechanic, aged 30, was brought to my house following an accident with his motor-cycle, in which he was thrown into a ditch. He landed with his right hand doubled under him and the left hand extended in front. On examination the only wounds found were several superficial cuts about the hands. On the right hand there was a fair-sized cut extending from the first interphalangeal joint of the thumb to the back of the wrist, midway between the tubercle of the ulna and Lister's tubercle. It was not deep, and did not display the superficial fascia. On the left hand, over the "anatomical snuff-box," was a large bruise. The remaining abrasions were only superficial. No bony injury could be detected in the damaged regions, either by clinical examination or by radiography at a later date. The movements of both thumbs, although painful, were of normal range. The man received the usual treatment with anti-tetanic serum, and after cleansing the wounds they were dressed with tincture of iodine.

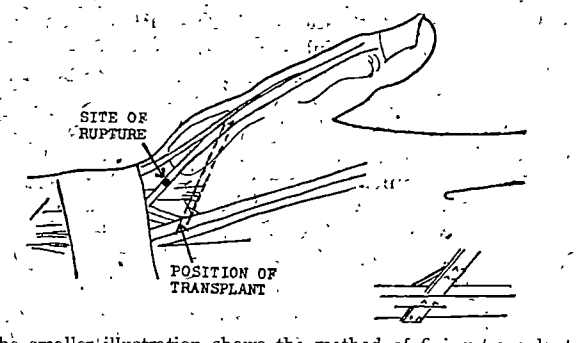
On March 9th the patient returned to tell me that he had felt something "go snap" in his right thumb while at work that morning. Since this he had not been able to use his thumb because of difficulty in manipulating the end. In fact, it was easy to confirm the man's statement, as he held his thumb up to view when he entered my room. The terminal phalanx drooped and could not be extended. Other movements were unaffected. The wound was dry, and healing in the normal manner; the swelling from bruising was almost gone. The tendon of the long extensor of the thumb could not be made out as a boundary of the "anatomical snuff-box."

It was decided to explore the region of the wound where it crossed the long extensor tendon. Accordingly, on March 10th, the wound over the thumb and the wrist was excised; the anaesthetic used was a "nerve block" at the elbow with 2 per cent. novocain, 15 c.cm. in all being used. This gave a perfect anaesthesia of the area of operation. The tendon was easily displayed, and there was found to be a rupture about half-way across its course as the boundary of the "snuff-box." The proximal end of the tendon was not in view. The ruptured end of the distal part was not ragged, but had the appearance of being cut with a not too sharp knife. The surface appeared normal and shiny. The small branch of the radial nerve proceeding up the radial side of the index finger crossed the tendon exactly at the point of rupture, and showed the effects of this relation in the form of a tiny blue fusiform swelling. (No area of anaesthesia had been detected previously.)

Search was now made for the end of the proximal part of the tendon, but was fruitless. The exploration was carried as far as the posterior annular ligament without result. An Esmarch bandage was applied from above down, but proved equally ineffective in bringing the end of the tendon into view.

With the state of affairs thus, it was decided to split the tendon of the extensor of the index finger, and having passed the distal end of the ruptured tendon through the split and back again, to suture it in this position. This was easily done, and the wound duly closed without drainage. The hand was then well wetted with surgical spirit, dried, and the dressing applied. A palmar plaster cast was then made to maintain the thumb and index in extension.

On March 21st the whole of the splintage and dressing was removed and the sutures taken out. The wound had healed neatly and firmly. The splint was cleaned, repaired, and reapplied. The hand was inspected several times during the next eighteen days, passive movement being applied during this time. Active movements were started on April 12th. These were free but somewhat clumsy. The scar was healthy and firm without being adherent to any underlying structures.



The smaller illustration shows the method of fixing transplant.

In the meantime, on March 19th, the patient suffered an exactly similar occurrence to the left thumb: on this occasion the gap in the tendon could be felt in almost exactly the same place as the rupture had occurred on the right. Suffice it to say that on exploring the tendon the two ends were found little separated, being held together by some slight fibrous reaction, no doubt due to the resolution of the large haematoma that had occupied this space at the time of the accident. The ends of the tendon at the rupture were not sharply "cut" as they had appeared on the right side, but frayed and unhealthy-looking; there was a strong resemblance to a piece of string which had been cut through by fraying it on the edge of a sharp stone. The tendon sheath was adherent, both above and below the site of rupture.

The ends were cleaned and sutured with fine catgut. The obstructing fibrous tissue was cleared away as far as possible, and the wound closed, no attempt having been made to clear the adherent tendon sheath. The same procedure was carried out with this thumb as has already been described for the right thumb. The wound healed by first intention, and active movements were obtained after twelve days from the time of operation.

Now (March, 1933) I have seen the patient again in order to see the result. The left thumb functions as it normally did before the accident. The right thumb has improved remarkably, and functions nearly as well as before, but is a little awkward at times, when fine movements are required. The patient finds nothing to complain of in either hand, and can do all his work without any trouble.

Roorkee, India. A. T. ANDREASEN, M.R.C.S., L.R.C.P.

Reviews

GREEN'S PATHOLOGY

In editing the fifteenth edition of *Green's Manual of Pathology*,[1] Dr. H. W. C. VINES has not only submitted the book to a drastic revision, but has greatly enlarged it. The present volume is more than one-third larger than its predecessor, the 650 pages of the latter having been increased to 930. Moreover, 150 new illustrations have been introduced, and over a hundred of the old figures replaced by new ones, all of them of the best quality. In carrying out the revision Dr. Vines has had the assistance of Dr. K. M. Lynch, professor of pathology, South Carolina. The original division of the work into general and special sections has been retained, the author noting with disapproval the tendency to combine the two which is exhibited in some of the recent textbooks. In other respects the order adopted in the last edition has been considerably altered, as shown in the table of contents, which has been amplified in details and thus rendered more useful.

Additional chapters have been written on avitaminosis, diseases of the ductless glands, diseases of the breast, and diseases of the genital tract. Many sections and chapters have been amplified and brought up to date, the section on tumours of the brain, for example, having been nearly doubled; on the other hand, in a few instances the descriptions have been rendered more concise, as in the general account of tumours, which has been reduced by twenty pages. All sections show evidence of careful revision and of an endeavour to introduce such modern views as experience has proved to be sound, as in the description of the cells involved in inflammatory processes. It may be said that the editor has produced what almost amounts to a new book, yet it still retains the characters of the original *Green's Pathology*, which has probably always been the most popular textbook on the subject among English students, and in its new edition deserves to remain a favourite.

HEATING AND VENTILATION

The heat losses from the body of man are effected by means of radiation, convection, and the evaporation of moisture. When one of these processes is checked another develops compensatory activity, but they are not all equally comfortable, and their due adjustment so as to reduce discomfort, where the environment is amenable to control, is always important. Problems thus present themselves in the heating and ventilation of buildings for which engineers have devised solutions. Engrossed, however, in the mechanical or other complexities of practical schemes, the technical textbooks have been apt to pass too lightly over the fundamentals. To fill this gap Dr. H. M. VERNON has written a book[2] on the principles which underlie, or should underlie, current practice in these matters.

After referring to the kata-thermometer scale and the Pittsburg effective temperature, the author describes the eupatheoscope and the globe thermometer, which take account of radiation. He indicates how loss of heat by buildings may be reduced. He says of the coal fire that with its flue on an inner wall as much as 50 per cent. of the total heat goes to warming the house. The various methods of heating by hot water and steam are considered. The long low wall-type hot-water radiator beneath the whole length of windows receives commendation. The account of low-temperature radiant heating includes the panel system with embedded hot-water pipes, the non-embedded panels or rayrads, under-floor heating by air ducts as in Liverpool Cathedral, electric panels, and also electric tubular heaters.

In the chapter on natural ventilation the laws of flow in air circuits are cited, and the importance urged of having a ventilating flue in every habitable room. While natural ventilation through chimneys and flues is usually adequate for private houses, it may not suffice for schools, assembly rooms, and factories. In the chapter on mechanical ventilation the upward and downward methods for places of assembly, where lateral distribution might be difficult, are compared with one another. On the upward plan the fresh air is introduced low—in the House of Commons at floor level, in the Cambridge Examination Hall seven feet above the floor—and exhausted at the ceiling. On the downward plan—exemplified in the United States Hall of Congress and the Empire Cinema, London—the fresh air enters by way of the ceiling and is withdrawn at floor level. The concluding chapters deal with the control of humidity and air conditioning in industry.

The foregoing summary may convey some impression of the scope and contents of Dr. Vernon's book. Its merit can be fully appreciated only by perusal and study. We cordially recommend it, for guidance and information, not only to engineers, but to medical officers, factory inspectors, sanitary officials, and others who are concerned in their several ways with heating and ventilation.

NEPHRITIS

Dr. ROBERT PLATT'S *Nephritis and Allied Diseases*[3] is an excellent account of present-day knowledge. It is no mere compilation; the author has studied the authorities, but has in addition expressed his own views in writing the various divisions of the subject. That these views are orthodox and at the same time up to date makes the book a valuable one to place in the hands of the senior students and practitioners for whom it is designed. After a short introduction on the structure and function of the kidney, Dr. Platt discusses the renal function in disease, following mainly the modern theory of kidney secretion propounded by Cushny and elaborated by Verney and his co-workers, and the methods by which renal functional capacity is assessed. These are adequately and clearly dealt with. The clinical section which follows constitutes the main part of the book. Here the reader will find a full description of the aspects of the form of nephritis, chiefly seen in young people, in which three stages can frequently be recognized: an acute onset with haematuria and oedema, a prolonged oedematous stage, and a terminal stage without oedema. The two latter stages may be separately named "subacute" and "latent" respectively, and are followed by a chronic stage in which renal insufficiency has developed.

Many names have been proposed by the various writers on Bright's disease for these stages and the varied combinations of them which are met with in patients. Practitioners will find that Dr. Platt's descriptions will enable them to place their own cases under the appropriate heading so that the indications for treatment which he has so well detailed may be applied. The kidney changes and alterations of renal function in pregnancy, in hypertension and generalized vascular disease, in bacterial infections of the kidney and in affections of the renal pelvis and urinary tract are described, together with the treatment to be adopted. The reader will find a series of diet lists which can be used in hospital or private work, in-

[1] *Green's Manual of Pathology*. Revised and enlarged by H. W. C. Vines, M.A., M.D. Fifteenth edition. London: Baillière, Tindall and Cox. 1934. (Pp. xii + 928; 425 figures, 8 coloured plates. 25s.)

[2] *The Principles of Heating and Ventilation*. By H. M. Vernon, M.A., M.D. London: Edward Arnold and Co. 1934. (14s. net.)

[3] *Nephritis and Allied Diseases. Their Pathogeny and Treatment*. By Robert Platt, M.D., M.R.C.P. London: H. Milford, Oxford University Press. 1934. (Pp. 166. 7s. 6d. net.)

cluding two examples of ketogenic menus for the induction of acidosis in the treatment of coliform affections of the urinary tract. At the end of each section there are a few clinical histories illustrating the actual course of typical cases of the condition described. Dr. Platt's book strikes one as having just that amount of theory which makes the subject interesting, and the practical part is wholly good.

OBSTETRICS AND GYNAECOLOGY

The sixth volume of the *Practitioners' Library of Medicine and Surgery*, dealing with *Obstetrics and Gynaecology*,[4] is a handsome and clearly printed book, which runs to about 1,000 pages, a generous amount of space being devoted to lists of contributors, tables of contents, and index. The general purpose of this library is to "present material which is pre-eminently of practical utility to the man in general practice." Most of the contributors are apparently relatively junior men of the status of associate professor or instructor. The article on diseases of the uterus is by a clinical associate in surgery of the University of Oregon.

The opening chapter deals appropriately enough with development. In order to obtain an insight into the difficult subject of embryology the reader is advised that "the mind must conceive of four functions simultaneously —length, breadth, depth, and time." The practitioner need not be discouraged at being asked to visualize these abstractions as functions, for the descriptions which follow are clearly written and well illustrated. A short section on the chronology of foetal development is particularly interesting and useful. In discussing the hygiene of pregnancy the author, Dr. Emerson L. Stone of New Haven, strikes a note of optimism which is hardly justified when he writes that pre-natal care and the development of obstetrics have been "the chief factors in the achievement of a negligible rate of morbidity and mortality for mother and child." The view that the present rate of maternal mortality is negligible is certainly not shared by the senior obstetric teachers in the United States, as has been shown by recent reports from the White House Conference and the New York Academy of Medicine. The detailed advice given about ante-natal care and about the home equipment necessary for a confinement is sound and adequate.

Professor Karl L. Wilson of Rochester, N.Y., has contributed an admirably written and well-illustrated account of normal labour, which readers of this System will value as a reliable and practical guide. In discussing the physiology of the puerperium full consideration is given to recent experimental work on the hormonal influences which excite and regulate lactation, while the possible influence of the placenta as an inhibitor of lactation is also considered. In this article an admirable balance is maintained between scientific advance and practical requirements, for the clinical details dealing with the process of nursing and the care of the breasts are entirely praiseworthy. Many useful recommendations with regard to posture and exercises are also given. One of the most interesting contributions is that of Professor Thoms of New Haven on the pathology of labour and the puerperium. In writing of subnormal expulsive forces the wise remark is made that women who show "more or less marked asthenic tendencies cannot be expected to be athletes in the process of parturition." The treatment recommended for inertia in the first stage is one-quarter to one-sixth of a grain of morphine, and, after the patient has slept, one to two ounces of castor oil, followed by the controlled use of pituitrin by intranasal application until labour is actively progressing. Dealing with the prevention of post-partum haemorrhage, Professor Thoms states that it is his rule never to leave the bedside of a patient for at least an hour, even if a competent nurse is in attendance; this is an admirable example for a teacher to set his students.

The description of gynaecological conditions has been considerably abbreviated by the omission of all details of operative procedures. The clinical pictures are, however, well drawn both with pen and with pencil, and the aim of the contributors in this part of the work has clearly been to emphasize only those aspects in which the general practitioner is directly interested. It cannot be doubted that the American doctors who consult this work and follow its advice will be well equipped in the departments of obstetrics and gynaecology.

[4] *The Practitioners' Library of Medicine and Surgery.* Vol. vi. *Obstetrics and Gynaecology.* London: D. Appleton-Century Company. 1934. (Pp. xlv + 900; illustrated. 50s.)

LATENT PLUMBISM?

The reader will be somewhat surprised to discover that under the title of *The Menace and Geography of Eclampsia in England and Wales*[5] Dr. NORMAN PORRITT has developed the disturbing hypothesis that a considerable section of the population of this country is either actually suffering from, or is exposed to the menace of, a latent form of lead poisoning. The author's thesis is that a mild form of plumbism exists, hitherto unrecognized by the medical profession, which reveals itself, not by the classical signs and symptoms, but by a symptom-complex, which in fact (although the author does not say so) resembles that of general neurasthenia. The proof of this hypothesis offered to the reader is that a series of such cases have come under the personal observation of Dr. Porritt, in which the subjects were found to be drinking water which contained a variable amount of lead, and were also excreting lead in the urine. Some of these persons who went away from home for a change were relieved thereby of their symptoms, but the reader is not told that the drinking water in the new places of abode was shown by analysis to be free from lead. In no case apparently was it demonstrated that along with the disappearance of the symptoms the urine became free from lead, nor is it shown that the severity of the symptom-complex was proportionate to the amount of lead in the water or to the amount excreted in the urine. The author's lament that he failed to convince the medical officer of health of the town in which he then practised of the truth of his theories seems scarcely justified. Who could be convinced by such incomplete evidence?

In this book Dr. Porritt advances the further theory that lead in drinking water, even in very small amounts, constitutes a predisposing cause of abortion and of eclampsia. The evidence adduced is that the mortality from "eclampsia and other accidents and diseases of pregnancy"; is higher in districts supplied with soft, plumbo-solvent water than elsewhere. Dr. Porritt rightly draws attention to the well-known abortifacient action of lead exerted through its destructive influence upon chorionic tissues. Lead also injuriously affects the functional activity of the kidney, and so may predispose to the occurrence of eclampsia. All this is undoubtedly possible, but unfortunately the statistical material requisite for properly testing the theory was not available to the author. The group figures upon which he relies include other causes of maternal death of equal importance to eclampsia. It would seem very improbable that the Public Health Service can have overlooked a latent form of plumbism due to potable water, as the author would have us believe. In any case the questions he raises are for the medical officer of health, not the obstetrician, to deal with.

[5] *The Menace and Geography of Eclampsia in England and Wales.* By Norman Porritt, M.R.C.S., L.R.C.P. London: H. Milford, Oxford University Press. 1934. (Pp. 88. 5s. net.)

OCULAR ASTIGMATISM

Astigmatism of the refractive media of the eye was first discovered by the English physiologist Young in 1801; twenty-six years later the Cambridge astronomer Airy made the first correction of the defect by the use of cylindrical lenses. Since then there have been many investigations into the causes of the defect. At one time, owing to the work of Javal, there was a tendency to ascribe the finding to irregularity of the corneal surface, and with his ophthalmometer measurements of the inequalities of the curvature of the eye were made. The perfection of the instrument showed, however, that though the anterior surface of the cornea was a large factor in the production of the defect yet the total astigmatism varied considerably from that of the cornea; it might be more or less, and the axes of the corneal and total astigmatism might vary. It became evident that other surfaces of the refracting media took part in the production of the defect, and the measure of the whole by means of retinoscopy was more accurate and useful than the measure of the corneal surface. In a recent monograph on *Biastigmatisme*,[6] by Drs. M. MARQUEZ and T. BUSTO of Madrid, there is presented a detailed discussion of these matters, and therewith a consideration of the value of correcting astigmatism by means of bicylindrical lenses, set at varying angles to each other so as to produce a great variety of fine corrections. The authors have worked out a series of tables which give the values, in spheres and cylinders, that result from these combinations.

Notes on Books

In *The Healthy Infant*[7] Dr. E. R. C. WALKER has given a very clear account for the intelligent mother of how to manage her child. Besides describing in detail the general principles of diet and hygiene, Dr. Walker has successfully shown the reasons for many of the measures advocated, and he includes a very good adaptation of modern psychological teaching for use in regard to the early period of life. It is possible to find fault with small, almost controversial, matters in certain sections—as, for example, the advocacy of one breast at a feed instead of both—but in general the presentation of teaching where there is room for a difference of opinion is scrupulously fair, and the intelligent mother should easily be able to make up her mind upon a course of action. It is a pity that while such elementary details as care of the nails receives mention, there is no discussion of what the mother is to do about the foreskin. Professor Charles McNeil has written a foreword commending Dr. Walker's book, and with what he says there we heartily agree.

A book which has proved highly popular with nurses is the *Complete System of Nursing*, by A. MILLICENT ASHDOWN; it has been reprinted eleven times since 1917. The author has now issued her book with certain additions and deletions as *A Complete System of Nursing for Male Nurses*.[8] For this purpose chapters dealing with diseases of women and children have been deleted and several illustrations have been added. The volume treats of the general duties of a nurse and the minor surgical and medical procedures which the nurse may be called upon to carry out—such as drawing off stomach contents, the testing of urine, catheterization, etc. The application of bandages, splints, extensions, etc., is fully treated. A chapter on the general observation of symptoms appears to be particularly helpful. Medical nursing, with general descriptions of various diseases and the special points of attention required from the nurse in each, is treated with considerable fullness, and surgical nursing is similarly dealt with. Special chapters are devoted to ophthalmic nursing, nursing in diseases of the ear, nose, and throat, massage, medical electricity, the administration of drugs, and treatment of poisoning, and there is a brief, final chapter on diets and sickroom cookery. This book, like the manual upon which it is based, should prove very useful to nurses.

Mr. J. E. R. MCDONAGH has now written the third volume of *The Nature of Disease Journal*.[9] Like its two predecessors, this is a substantial book of more than two hundred pages in which the author presents his original (one might almost say his unique) views on medical problems. The chief subjects discussed in volume iii are included under the headings "Rheumatism," "Women's Diseases," and "Infections from Within." There is also an editorial on the origin and nature of disease, and a chapter on the factors which determine the part of the body selected for attack in disease. The book will be added to the Library of the British Medical Association.

[6] *Le Biastigmatisme dans la Pratique. Tables pour la Transformation des Verres Bicylindriques d'Axes Obliques en Verres Sphérocylindriques.* By M. Marquez and T. Busto. Second edition. Madrid: J. Cosano. 1933. (Pp. 55. 5 pesetas.)

[7] *The Healthy Infant.* By E. R. C. Walker, B.A., M.B., F.R.C.P. Edinburgh: W. Green and Son, Ltd. 1934. (Pp. 137. 3s. 6d. net.)

[8] *A Complete System of Nursing for Male Nurses.* By A. Millicent Ashdown. London and Toronto: J. M. Dent and Sons, Ltd.; New York: E. P. Dutton and Co., Inc. 1934. (Pp. xvi + 639; illustrated. 12s. 6d. net.)

[9] *The Nature of Disease Journal.* By J. E. R. McDonagh, F.R.C.S. Volume iii. London: William Heinemann (Medical Books) Ltd. 1934. (Pp. 245. 10s. 6d. net.)

Preparations and Appliances

ANAESTHETIC SHIELD FOR USE IN MASTOID OPERATIONS

Mr. C. HAMBLEN THOMAS, F.R.C.S. (London, W.1), writes:

In mastoid and other operations on the ear, when the face is covered by the usual towel to shield the operation area, there is always a certain amount of discomfort to the operator and the anaesthetist. The latter has difficulty in keeping the patient's face under observation for the state of the pupils, etc., and a possible seventh nerve twitch of the face muscles, and the former is apt to have his towels and instruments displaced by the anaesthetist's manipulations. I have had made for me a simple and cheap metal shield, on the principle of the pattern I saw at the Manhattan Ear and Throat Hospital, New York.

Its method of use and its appearance when folded are illustrated here. When folded it is less than the size and about the thickness of this *Journal*, and it is easily packed. When in use it has sufficient rigidity to maintain its position. It can be sterilized, or it can be covered with a narrow sterilized towel folded around it. The lower plate is placed between the under side of the patient's face and a flat surface on which the patient's face (which has been turned well over) lies. The upper plate can be fixed by tapes or by towel clips engaging the upturned edge of the plate and the other towels around the patient's head. This upper plate acts as a small instrument table for the assistant.

The shield is made for me by Messrs. Arnold and Sons (John Bell and Croyden), 52, Wigmore Street, London, W.

VIONASE TABLETS

Vionase tablets (Wilcox, Jozeau and Co. Ltd., London) contain medicinal yeast (2½ grains per tablet), exsiccated ferrous sulphate (2¾ grains per tablet), and small quantities of copper and manganese. They are recommended for the treatment of microcytic anaemia, and also for neurasthenia, debility, etc.

METROPOLITAN COUNTIES BRANCH: CHELSEA DIVISION

At a meeting of the Chelsea Division the following officers were elected:

Honorary Secretary, Dr. F. W. W. Griffin. *Representative in Representative Body*, Dr. Hannah P. Anderson. *Deputy Representative in Representative Body*, Dr. E. Fairfield Thomas.

The meeting resolved that facilities for immunization against diphtheria, as in the model scheme of the British Medical Association, should be available to the public through their medical practitioners without attendance at any particular clinic, and that copies of this resolution should be sent to the Metropolitan Counties Branch and to neighbouring Divisions.

METROPOLITAN COUNTIES BRANCH: WANDSWORTH DIVISION

A meeting of the Wandsworth Division was held at Wandsworth on July 12th, when the Wandsworth School Treatment Centre was discussed. In 1932 a trust deed to manage the property was drawn up in the names of Dr. Gay, Dr. S. Verdon-Roe, and Mr. Townsend. Dr. WARNER COLLINS insisted that the centre should remain under the control of the local Division, since unity meant strength, which was badly needed against the many inroads on medical practice. Dr. R. CARSWELL said the centre should be managed by the British Medical Association, and he accordingly proposed: "That this meeting expresses the opinion that the management of the Wandsworth School Treatment Centre ought to be a function of the local Division." This was seconded by Dr. COLLINS and carried without dissent. It was agreed that the executive should prepare a practical scheme for making this motion effective. On the proposition of Dr. R. A. SHEKLETON, the secretary was asked to invite nominations for three additional members of the management committee.

The Division's representatives were then instructed, and, on the motion of Dr. SHEKLETON, seconded by Dr. GAY, a vote of thanks was accorded Dr. G. Pollock for his ability, unfailing courtesy, and consideration to everyone during his two years as chairman.

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

Surgeon Captains L. Warren, O.B.E., to the *Drake*, for Royal Naval Barracks; E. MacEwan to the *Queen Elizabeth* as Fleet Medical Officer, on staff of Commander-in-Chief, and as specialist in hygiene.

Surgeon Lieutenant Commander E. C. Davis to the *Victory*, for Haslar Hospital, September 3rd, and to the *President*, additional, for promotion course, September 27th; G. A. Miller to the *Harrier*; J. J. Benson to the *Dryad*; T. F. Barlow to the *Carlisle*.

Surgeon Lieutenant (short service) W. J. F. Guild, seniority antedated to February 20th, 1932.

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Lieutenant E. G. Thomas to the *Effingham*.

Probationary Surgeon Sublieutenant T. H. Pierce to the *Victory*, for Haslar Hospital.

ROYAL ARMY MEDICAL CORPS

Lieutenants L. G. Irvine and W. F. L. Fava to be Captains.

Lieutenant (on probation) H. V. D'A. Iles is restored to the establishment.

Lieutenant (on probation) J. Morgan resigns his commission.

ROYAL AIR FORCE MEDICAL SERVICE

Group Captain F. C. Cowtan to Princess Mary's R.A.F. Hospital, Halton, for duty as Commanding Officer.

Flight Lieutenant F. W. P. Dixon to No. 33 (B) Squadron, Bicester.

ROYAL AIR FORCE RESERVE: MEDICAL BRANCH

Flight Lieutenant (Honorary Squadron Leader) T. M. Walker ceases to be employed with the Regular Air Force, and relinquishes his commission on completion of service, and is permitted to retain the honorary rank of Squadron Leader.

SUPPLEMENTARY RESERVE OF OFFICERS

ROYAL ARMY MEDICAL CORPS

Lieutenants D. T. Maclay, W. S. C. Copeman, J. N. Leitch, and C. D. Evans to be Captains.

Association Notices

SIR CHARLES HASTINGS CLINICAL PRIZE

The Sir Charles Hastings Clinical Prize, which consists of a certificate and a money award of fifty guineas, is again open for competition in respect of 1935. The following are the regulations governing the award:

1. The prize is established by the Council of the British Medical Association for the promotion of systematic observation, research, and record in general practice; it includes a money award of the value of fifty guineas.

2. Any member of the Association who is engaged in general practice is eligible to compete for the prize.

3. The work submitted must include personal observations and experiences collected by the candidate in general practice, and a high order of excellence will be required. If no essay entered is of sufficient merit no award will be made.

4. Essays, or whatever form the candidate desires his work to take, must be sent to the British Medical Association House, Tavistock Square, London, W.C.1, *not later than December 31st, 1934*.

5. No study or essay that has been published in the medical press or elsewhere will be considered eligible for the prize, and a contribution offered in one year cannot be accepted in any subsequent year unless it includes evidence of further work.

6. If any question arises in reference to the eligibility of the candidate, or the admissibility of his or her essay, the decision of the Council on any such point shall be final.

7. Each essay must be typewritten or printed, must be distinguished by a motto, and must be accompanied by a sealed envelope marked with the same motto, and enclosing the candidate's name and address.

8. The writer of the essay to whom the prize is awarded may, on the initiative of the Science Committee, be requested to prepare a paper on the subject for publication in the *British Medical Journal*, or for presentation to the appropriate Section of the Annual Meeting of the Association.

9. Inquiries relative to the prize should be addressed to the Medical Secretary.

BRANCH AND DIVISION MEETINGS TO BE HELD

METROPOLITAN COUNTIES BRANCH: KENSINGTON DIVISION.—At Hospital for Epilepsy, Maida Vale, W., Friday, September 28th, 8.45 p.m. Dr. W. J. O'Donovan, M.P.: "Neuroses of the Skin and their Treatment."

NORTH OF ENGLAND BRANCH: GATESHEAD DIVISION.—At 60, Bewick Road, Gateshead, Friday, September 21st, 8.45 p.m. General meeting to receive report of representative on the Annual Representative Meeting, 1934.

YORKSHIRE BRANCH: GOOLE AND SELBY DIVISION.—At Londesborough Arms Hotel, Tuesday, September 18th, 8.30 p.m. Mr. B. Jeaffreson: "The Problem of Dysmenorrhoea." Supper at 7.45 p.m.

British Medical Association

OFFICES: BRITISH MEDICAL ASSOCIATION HOUSE TAVISTOCK SQUARE, W.C.1.

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Diary of Central Meetings

SEPTEMBER

20 Thurs. Insurance Acts Committee, 11.30 a.m.
25 Tues. Consultants Board, 4.30 p.m.
27 Thurs. Medical Students and Newly Qualified Practitioners Subcommittee, 3.30 p.m.

OCTOBER

2 Fri. Public Health Committee, 2 p.m.

POST-GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole Street, W.1.—*Westminster Hospital*, S.W.: Course in Medicine and Surgery, open to men graduates only. *Medical Society of London*, 11, Chandos Street, W.1: Tues., 2.30 p.m., Lecture-Demonstration (illustrated by cases) by Dr. Clark-Kennedy, on Hemiplegia. *Panel of Teachers*: Individual clinics in various branches of medicine and surgery available daily. Courses, clinics, etc., arranged by the Fellowship are open only to members and associates.

LIVERPOOL UNIVERSITY CLINICAL SCHOOL ANTE-NATAL CLINICS.—Royal Infirmary: *Mon.* and *Thurs.*, 10.30 a.m. Maternity Hospital: *Mon., Tues., Wed., Thurs.*, and *Fri.*, 11.30 a.m.

VACANCIES

ALTRINCHAM GENERAL HOSPITAL.—Senior H.S. (male).

BATH: WINSLEY SANATORIUM.—R.A.M.O. (male).

BIRKENHEAD GENERAL HOSPITAL.—C.O. (male).

BIRMINGHAM CITY.—J.A.M.O. (male, unmarried) at Monyhull Colony Certified Institution.

BIRMINGHAM CITY.—J.M.O.'s (males) at Dudley Road Hospital.

BIRMINGHAM: QUEEN'S HOSPITAL.—Resident Anaesthetist.

BRIGHTON COUNTY BOROUGH.—Senior R.M.O. (male, unmarried) at the Borough Infectious Disease Hospital and Sanatorium.

BRIGHTON: ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—H.P. (male).

BRISTOL CITY AND COUNCIL.—J.A.R.M.O. at Ham Green Hospital and Sanatorium.

BRISTOL ROYAL INFIRMARY.—Assistant to the Cancer Research Department.

BURNLEY COUNTY BOROUGH—Dental S.

CAMBRIDGESHIRE COUNTY COUNCIL.—M.O.H. (male).

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—H.S. (male).

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street, W.C.—Assistant S.

CHIPPING WYCOMBE BOROUGH.—(1) M.O.H. (2) School M.O. (3) M.O. for Maternity and Child Welfare. (4) Police Surgeon.

CHESTER: EAST LANCASHIRE TUBERCULOSIS COLONY, Barrowmore Hall, Great Barrow.—H.S. (male).

DEVONPORT: ROYAL ALBERT HOSPITAL AND EYE INFIRMARY.—Assistant H.S. (unmarried).

DORCHESTER: DORSET COUNTY HOSPITAL.—H.S. (unmarried).

EDINBURGH: ROYAL INFIRMARY.—Radiologist (male).

ESSEX COUNTY HOSPITAL.—Two J.R.M.O. at Oldchurch Hospital, Romford.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—H.P. (male).

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—(1) H.S. to Ear, Nose and Throat Department. (2) Senior H.S. Males.

GLASGOW CORPORATION.—J.R.M.O. (male) at Hawkhead Asylum.

GORDON HOSPITAL, Vauxhall Bridge Road, S.W.—R.H.S.

GRANGE-OVER-SANDS: WESTMORLAND SANATORIUM.—H.P.

HERTFORD COUNTY HOSPITAL.—(1) H.P. (2) H.S. Males.

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.—(1) R.M.O. (2) H.P. Males.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) H.P. (2) H.S. Males, unmarried.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, Grove End Road, N.W.—R.H.S. (male).

JEWISH MATERNITY HOSPITAL, Underwood Street, E.—R.H.S.

LEEDS: GENERAL INFIRMARY.—Radio-Surgical H.S.

LEIGH INFIRMARY, Lancashire.—R.H.S. (male, unmarried).

LIVERPOOL AND DISTRICT HOSPITAL FOR DISEASES OF THE HEART.—H.P.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) M.O. to the Special Departments and Resident Anaesthetist. (2) R.C.O.

LONDON COUNTY COUNCIL.—Resident Medical Superintendent at Southern Hospital, Dartford.

LONDON LOCK HOSPITAL, Dean Street, W.—R.M.O. to Male Departments.

LONDON LOCK HOSPITAL, Harrow Road.—R.M.O. to Female Department.

LUTON: BUTE HOSPITAL.—H.S. (male).

MANCHESTER: ANCOATS HOSPITAL.—(1) Assistant Pathologist. (2) Medical Registrar. (3) R.M.O. (4) H.P.

MANCHESTER CITY.—Third R.A.M.O. (unmarried) Grade I, at Monsall Hospital for Infectious Diseases.

MANCHESTER ROYAL INFIRMARY.—Part-time J.A.M.O. (non-resident) in the Radiological Department.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.—H.S.

MARGATE AND DISTRICT GENERAL HOSPITAL.—R.M.O. (male).

MARGATE: ROYAL SEA-BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Visiting S. for Ear, Nose, and Throat cases.

MERTHYR GENERAL HOSPITAL.—H.S.

MEXBOROUGH: MONTAGU HOSPITAL.—J.H.S. (female).

MIDDLESEX COUNTY COUNCIL.—R.A.M.O (male, unmarried) at the County (Tuberculosis) Sanatorium, Harefield.

NEWCASTLE-UPON-TYNE: ROYAL VICTORIA INFIRMARY.—Hon. Assistant to the Orthopaedic Department.

NEWCASTLE-UPON-TYNE: ROYAL VICTORIA INFIRMARY AND UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Junior Assistant in the Pathological Department and Demonstrator.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—(1) H.S. to Special Departments (Ear, Nose, and Throat, and Ophthalmic). (2) H.S. Males.

NOTTINGHAM HOSPITAL FOR WOMEN.—H.S.

NOTTINGHAM: CHILDREN'S HOSPITAL.—R.H.P. (female).

NOTTINGHAM: CITY MENTAL HOSPITAL.—J.A.M.O. (male, unmarried).

OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—(1) Hon. Assistant Anaesthetist. (2) R.S.O. (male).

PLYMOUTH CITY.—J.A.M.O. at City (General) Hospital.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone Road, N.W.—(1) R.A.M.O. (male). (2) District R.M.O.

RADIUM INSTITUTE, Riding House Street, W.—H.S. (unmarried).

READING: ROYAL BERKSHIRE HOSPITAL.—Pathological Assistant (male).

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Anaesthetic Registrar

ROYAL NAVAL DENTAL SERVICE.—Three Vacancies as Dental Officer.

ROYAL NORTHERN HOSPITAL, Holloway, N.—Anaesthetist (female).

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, Broad Street, W.C.—Registrar.

ST. HELENS HOSPITAL.—J.H.S. (male).

ST. MARY'S HOSPITAL, W.—Hon. P. to the Department for Diseases of the Skin.

ST. MARY'S HOSPITAL, Cambridge Place, W.—Part-time Assistant Director in the Venereal Diseases Department.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—H.S.

SHEFFIELD RADIUM CENTRE.—Assistant M.O.

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—Two H.S.

SWANSEA GENERAL AND EYE HOSPITAL.—C.O. (male, unmarried).

WAKEFIELD CITY.—J.A.M.O.

WALSALL GENERAL HOSPITAL.—H.S.

WEST HAM COUNTY BOROUGH.—J.A.M.O. (male) at Plaistow Fever Hospital.

WILLESDEN GENERAL HOSPITAL, Harlesden Road, N.W.—(1) C.O. (2) H.P. Unmarried.

WIMBLEDON HOSPITAL, Thurstan Road, S.W.—R.M.O. (male).

WINDSOR: KING EDWARD VII HOSPITAL.—H.S.

CERTIFYING FACTORY SURGEONS.—The following vacant appointments are announced: Sowerby Bridge (Yorkshire), Guisborough (Yorkshire), Budleigh Salterton (Devon). Applications to the Chief Inspector of Factories, Home Office, Whitehall, S.W.1, by September 25th.

This list is compiled from our advertisement columns, where full particulars are given. To ensure notice in this column advertisements must be received not later than the first post on Tuesday mornings. Further unclassified vacancies will be found in the advertising pages.

APPOINTMENTS

BARNES, F. G. L., M.R.C.S., L.R.C.P., Medical Superintendent, London County Council Mental Hospital, Epsom.

EVANS, Herbert T., M.D., M.R.C.P., Honorary Physician, Cardiff Royal Infirmary.

GILLESPIE, Noel Alex, B.M., B.Ch., Honorary Assistant Anaesthetist, London Hospital.

KEMM, R. St. J., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Cheddar District (Somerset).

STURM, F. P., M.D., M.Ch., Medical Referee under the Workmen's Compensation Act, 1925, for the Altrincham, Warrington (Circuit No. 7), and Leigh (Circuit No. 8) County Court Districts.

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

BIRTH

BRAITHWAITE.—On September 9th, at Northampton, to Norah, wife of Dr. Norman Braithwaite, Buckingham House, Brackley, a son.

MARRIAGE

DAVIES-THOMAS—DICKINSON.—On September 1st, at St. Philip's Church, Alderley Edge, by the Rev. W. E. Jones, M.A., Edward Davies-Thomas, M.R.C.S., L.R.C.P., L.D.S. R.C.S., younger son of the late Alderman D. Thomas, J.P., and Mrs. Thomas, "Trewen," Aberystwyth, to Kathleen Dickinson, M.B., Ch.B., D.P.H., younger daughter of Mr. and Mrs. R. H. Dickinson, "Ellerslie," Glossop.

DEATH

KING.—On July 25th, at Sandfield House, West Kirby, Cheshire, Richard Thacker King, M.D. Deeply regretted.

Printed and published by the British Medical Association, at their Office, Tavistock Square, in the Parish of St. Pancras, in the County of London.

British Medical Journal

SATURDAY, SEPTEMBER 15th, 1934

THE ACTION OF INSULIN

In no section of metabolic research has more intensive work been carried out than in that of carbohydrate metabolism. The dramatic results obtained by the application of insulin to disturbed sugar metabolism need no comment at this stage. From the clinical point of view, one of the most outstanding results of insulin treatment is gain in strength, and this is true even when the patient is still not completely stabilized. From a condition of weakness, which may render the diabetic subject a pathetic figure, there gradually or sometimes rapidly is brought about an increase in muscular power which astonishes even the practised specialist in diabetes. There can be no doubt that insulin produces in some peculiar way a re-establishment of those processes in the muscles which lead to a normal capacity for work. This is undisputed, and yet the actual mechanism of this extraordinary result is entirely obscure. In a recent series of lectures Macleod[1] enters in some detail into the experimental work in this field, but, interesting as are the results of individual experiments, the problem is not very much nearer solution. The well-known researches of Dale and his collaborators, showing that in the eviscerated, decapitated, and glucose-perfused cat the injection of insulin produces an amount of glucose oxidation and glycogen deposition in the muscles exactly accounting for the disappearance of glucose from the perfusing fluid, are strongly criticized by Macleod. Whilst Dale's results were of a precision that appealed to the physiologist as apparently demonstrating an almost mathematical accuracy in a biological experiment, the clinician continued to wonder what the relation was between a very depleted and abbreviated cat and a normal or diabetic subject. Macleod, however, has again marshalled very strong evidence against the hypotheses and assumptions made in these perfusion experiments.

An outstanding source of error in the usual methods of calculation is the interpretation of the respiratory quotient. Cathcart some years ago insisted that the non-protein respiratory quotient is not a true oxidation quotient, and more recently Thunberg goes so far as to say that *none* of the oxygen used in general metabolism is found in the expired CO_2, but that it is transformed to water. Investigation of the mechanism of insulin action in the intact animal is complicated by so great a number of accessory mechanisms that it seems almost impossible to expect any all-embracing conceptions to emerge. Macleod has reinvestigated and extended the *piqûre* experiment of Claude Bernard, and has shown that carbohydrate metabolism is, at least in part, under the control of a centre or centres in the upper part of the pons. Interpreting his results, he considers that the process of glyconeogenesis is under the control of the parasympathetic, and glycogenolysis under that of the sympathetic. In conjunction with these purely nervous controls must be considered the demonstrated existence of a diabetogenic influence exerted by the anterior pituitary. This has been shown strikingly by Houssay, who found that removal of the pituitary before pancreatectomy prevented the development of typical pancreatic diabetes. In this connexion the association of glycosuria, and sometimes of true diabetes, with acromegaly must be kept in mind. There is also the delicately adjusted response of the adrenal gland to changes in blood sugar, directed to maintaining the latter at normal levels.

The recent striking findings of Ellis,[2] showing that patients with severe diabetes can tolerate enormous doses of glucose with doses of insulin not exceeding, and even less than, those necessary for stabilization on restricted diets, will give an important impetus to new ways of thinking on the pathogenesis of diabetes. Ellis's work will require extended investigation before interpretation will be possible, for he does not give in his paper any metabolic figures except those of blood sugar and qualitative urinary findings. These results, at any rate, dispose of the common notion that diabetes is entirely a matter of pancreatic dysfunction. The older view that insulin produces some change of alpha-beta glucose into a more active form has never been convincingly substantiated, but it is significant that so eminent an authority as Macleod should state that he has "a suspicion that insulin acts primarily on the glucose molecule and that the various physiological effects which follow its injection are secondary to this change."

RECONSTITUTED AND SOPHISTICATED MILK

The establishment of the Milk Marketing Board, and elimination of the "cut price" wholesale milk upon which considerable profits were made, has led to ingenious devices for replacing lost incomes. One of them which has recently been engaging the attention of the ever-vigilant guardians of the public health is a new device to enhance the value of skimmed milk. This can be bought on a large scale for something in the neighbourhood of a penny a gallon, and, if cream is added to it, the result is a fluid resembling genuine milk. Skimmed milk powder is a cheap article of commerce. If this is dissolved in water and cream added the resulting solution is something not easily distinguishable from the natural secretion of the cow. Sold at about a shilling a gallon, this product of cream and skimmed milk, or skimmed milk powder, yields an enormous profit. It is true that few would

accept it as real milk did they know the method of manufacture; but it is an extremely difficult matter to stop the traffic because, after all, this commercially made solution contains the ordinary constituents of cow's milk and passes the ordinary tests applied by the food inspector. The percentage of water and cream can be regulated to a nicety.

It must not be forgotten, however, that while the minimum fat content of milk as laid down in the Milk Regulations, 1901, is 3 per cent., the average fat content of genuine cow's milk is approximately 3.6 per cent. It is not surprising that the manufacturers of this product are concerned more with satisfying the legal minimum than with the preparation of a product as rich in fat as genuine milk. In consequence the artificial product often yields on analysis the bare minimum or little more in fat content. In other words, this product is 20 per cent. deficient in fat, and it has been pointed out that milk which consistently yields on analysis a fat content of 3 per cent. or thereabouts is open to grave suspicion. Now that attention has been drawn to this product food inspectors will be on the alert. There is one further loophole in the armour of the faker: the Milk and Dairies Order, 1926, states that the vessels used for the conveyance of skimmed or separated milk or for containing such milk at any time when it is exposed for sale must be marked with the words "skimmed" or "separated" milk. Naturally the persons concerned in the concoction of "pseudo" milk are not anxious to advertise their activities and in some cases the label has been omitted and the law broken. There is need, however, for tightening up the law in this respect because the Article of the Order in question does not clearly indicate whether churns containing skimmed milk are required to be marked as such when in a dairy and not exposed for sale.

There is a second device, to which the Medical Officer of Health for Kensington has drawn attention. This is the addition of skimmed milk to ordinary milk in contravention of Section 4 of the Milk and Dairies (Amendment) Act, 1922, which provides that: "No person shall add any colouring matter or water or any dried or condensed milk or any fluid reconstituted therefrom or any skimmed milk or separated milk to milk intended for sale, and no person shall, either by himself or by any servant or agent, sell, or offer or expose for sale, any milk to which any such addition shall be made." It was discovered that skimmed milk to which a quantity of cream had been added was being mixed with ordinary milk, the product being sold as genuine milk. The result of adding cream to skimmed milk in the proportion of one gallon of cream to sixteen gallons of skimmed milk is to produce a liquid with a fat content slightly below the minimum standard of the milk regulations. Genuine milk, of course, contains fat in excess of the proportion required by law. The result of the mixture of the two fluids is a product with a fat content above the legal minimum but less than the average obtained from genuine milk. By this device is obtained, in addition to the legitimate trading profit, a further 9s. 6d. per churn of seventeen gallons.

Both devices—the reconstitution of milk from milk powder and the sophistication of milk by the addition of skimmed milk—are dishonest and undesirable practices. Present legislation is by no means adequate to deal with these new activities. The Kensington Town Council suggests that by new legislation the storage of milk powder on registered dairy premises should be prohibited; that dealers in skimmed milk should be registered and required to keep accurate records of consignments of skimmed milk arriving at or leaving the premises; that vessels containing skimmed milk should at all times be marked with the words "skimmed milk"; and, finally, that legislation relating to the addition of skimmed milk to milk should be amended so as to provide that milk includes cream. Great efforts are being made to improve the purity and quality of the most valuable of foods—milk. It is of first importance to stop the activities of persons who, in pursuit of personal profit, are placing on the market as genuine milk a liquid which is reconstituted or sophisticated.

CANCER CLAIMS

The recent publicity given by the Press both in this country and abroad to the alleged discovery of the cause of cancer by Dr. W. von Brehmer, a member of the Reich Biological Institute in Berlin, cannot pass without comment. Dr. von Brehmer[1] brings forward a hypothesis which rests on two series of observations—one physico-chemical and the other bacteriological. The first deals with the hydrogen-ion concentration of the blood, which he claims to be highly alkaline in cases of carcinoma, and the second purports to show that it is possible to isolate an organism from the blood and tumours of human beings and animals suffering from cancer, an organism which is only capable of active growth in an alkaline medium. From these observations he concludes that conditions which bring about marked alkalinity of the blood produce a suitable pabulum for the growth of the organism in question, which is responsible for the proliferation of the epithelium to form a cancerous growth.

In the first place, it would appear hardly believable that the extreme degrees of alkalinity of the blood claimed to have been observed by Dr. von Brehmer—as great a *p*H as 8.2 is described by him in an earlier article[2]—would be compatible with the continuation of life, and it is certainly contrary to previous belief and experience. This matter has been taken up by Professor Heubner and Dr. Druckrey,[3 4] who investigated the method adopted and have come to the conclusion published in the *Klinische Wochenschrift* that the palladium-hydrogen electrode hitherto used in the investigations

[1] von Brehmer, W.: *Med. Welt*, August 25th, 1934, No. 34, p. 1179.
[2] Idem: Ibid., December 9th, 1933, No. 49, p. 1737.
[3] Druckrey, H.: *Klin. Woch.*, July 14th, 1934, No. 28, p. 1027.
[4] Heubner, W., and Druckrey, H.: Ibid., September 8th, 1934, No. 36, p. 1284.

gives results which are so wholly inconsistent that no correction factor is capable of making them reliable. If this is so it is clear that the whole of the alkalinity theory is open to very grave doubts.

In regard to the organism isolated, Dr. von Brehmer gives an elaborate and lengthy description which forms the greater part of his publication. Its morphology appears to be highly complicated, and it only assumes a bacillary or "tubular" form in the blood when the latter is alkaline, or in a special highly alkaline culture medium. The life-cycle is elaborate, and no fewer than seven stages are described. In alkaline broth it grows as a pellicle, is motile, and forms spores under unfavourable conditions. When growing actively some forms break up and discharge fine granules, which are capable of regenerating into the tubular form. In acid broth it breaks up into minute bodies, which are filter-passing and which vegetate when returned to an alkaline medium. With such an elaborate morphology it is not surprising that Dr. von Brehmer reserves for a future date the placing of his organism in an ordered classification, but disappointment must be expressed at seeing in the text of his article published in the *Medizinische Welt* large-scale drawings containing detail almost, if not quite, beyond the limits of microscopical visibility, and yet not seeing a dark-ground photomicrograph of sufficiently high power or definition to show any detail.

When consideration is given to the significance of such an organism, many questions arise which require satisfactory answers before its connexion with the aetiology of cancer can be accepted. First, there is the question of contamination during manipulation. Professor Schilling[5] has carried out isolation experiments on the same lines and claims to have obtained similar organisms with complicated morphological forms. It is not to be suggested that any but the most careful manipulation was employed in either case, but at the same time bacteriologists will agree that there is a certain crudity in obtaining blood for cultivation from a finger prick and in grinding up a portion of a tumour in a mortar with saline solution and transferring a copious inoculum of the emulsion for cultivation in a fluid culture medium, the technique for both of which procedures is described. Then there is the question whether the tumour may not be harbouring some non-pathogenic organism. It is well recognized that in dealing bacteriologically with tissues it is not uncommon to meet with organisms of one kind or another which have invaded the tissues but which have no aetiological significance. Further, it does not appear that the most elementary of all questions has been satisfactorily answered or discussed—namely, whether the organism is constantly found in cases of cancer and in no other conditions. There is no information given as to how many cases have been investigated or from how many cases the "tubular" form of the organism has been isolated; nor is there information as to whether the organism has been sought for in, for example, lymphadenoma or the granulomas—conditions which might well serve as controls. Lastly, there is so far no real evidence that a pure culture of the organism will reproduce the condition in animals. Dr. von Brehmer claims that it does do so, but reserves this most important point for future publication.

That Dr. von Brehmer and his associates have been carrying out their work for many years is well known, and last year, from information received, it was expected that an important communication would be made at an early date. It was hoped that such proof as was wanting would become available. Careful perusal of the data must, however, point in one direction only—namely, that the highly alkaline condition of the blood described in cancer patients is a myth, and that the idea that the organism isolated, whatever it be, acts by virtue of its ability to thrive only in alkaline medium is therefore irrelevant, and, further, that there is so far no proof forthcoming that it is a factor in the aetiology of cancer. It seems highly probable that the present claims will sink into obscurity, and, like many such claims in the past, will leave no impression on cancer research. Let it suffice to add that information received from the recent medical congress at Frankfurt indicates that the many eminent scientists present there, who heard the communications and also saw the slides and photographs exhibited, were entirely unconvinced.

Cancer "cures" and the alleged discoveries of the cause of cancer have been flooding the world of late years, especially in more recent months, since the taboo of the word "cancer" has begun to disappear. It is no exaggeration to say that during the last decade more than 500 such "cures" or "discoveries of the cause of cancer" have been investigated. It is true that the majority of these are frivolous in the extreme, but a fair proportion are built upon a basis of fact, and who is to say there is nothing in them? Experience has shown, however, that any real advance in our knowledge concerning cancer is obvious and credible from the start, and that those theories and hypotheses which, when fully examined, are found not to be based on sound argument and accurate and controlled observations have invariably fallen to the ground. The time has come for the public to be educated to think of cancer as they think of other ills, and not to consider it to be a thing unclean and not to be discussed. The greatest fear is the fear of the unknown, and knowledge regarding cancer and its nature largely dispels that fear of falling victim to the disease which is so prevalent in the minds of the community. At the present time the greatest hope of safety lies in early diagnosis. Fortunately, early diagnosis can be made with little difficulty in those forms of cancer which are the most common. It only requires the co-operation of the public to bring the patient and the doctor together in the early stages to effect a permanent cure in 50 per cent. of these more common forms. Let us educate the public to become aware of the problems of cancer and of the stages already reached in investigation and treatment, rather than let them catch at any straw in the shape of alleged cures which may drift their way.

[5] Schilling, V.: *Med. Welt*, August 25th, 1934, No. 34, p. 1186.

INFANTILE CONVULSIONS

An association of general practitioners in France, under the name of *Assises Nationales de Médecine Française*, was founded to study in the everyday life and experience of its members various problems which could only receive a fragmentary type of investigation at the hospitals and clinics. A recent meeting dealt with the subject of infantile convulsions, and the discussion has been summarized in an article by Dr. P. Hartenberg.[1] It is pointed out that there are at least four schools of thought on convulsions in infancy: one holds that all such fits are epileptic, with the same aetiology as in adult life; one denies this view and thinks convulsions have a relatively banal importance without any relation to epilepsy; one holds that the underlying cause in all cases is tetany; and a fourth doctrine admits the possibility of all three preceding views. While the congress did little to elucidate this fundamental problem of causation it reached agreement on many points. It was reported from every area that there has been a great diminution in infantile convulsions in recent years, and that the actual fit must be regarded as a symptom of some more radical malady. The list of existing causes contains such well-known disturbances as fevers, gastro-intestinal infections and parasites, dentition, meningo-encephalitis and birth trauma (including asphyxia), while a familial predisposition was also noted in many instances. Syphilis was admittedly not as common as has been previously taught, while an alcoholic heredity is rarer than heretofore. In general the assembled practitioners thought that spasmophilia was an unusual factor in convulsions. It was agreed that the immediate prognosis is better than formerly, there being fewer fatal cases; but as to the eventual prognosis, especially concerning the possible development of epilepsy in later life, there was difficulty in reaching agreement as to the necessary criteria for prophecy. The proportion of all infants with fits who develop mental deficiency, paralysis, or epilepsy was variously put between 1 and 10 per cent. Dr. Hartenberg expressed a personal view by stating that the only guiding line is the presence or absence of a cerebral lesion. Another recent review[2] of the causation of convulsions in childhood by Dr. M. Peterman approaches the subject from a different aspect, and the conclusions have a bearing on the special period of infancy. The author has reviewed 500 cases in children brought to him in hospital or private practice for fits in the past ten years. The percentage distribution is as follows: epilepsy (idiopathic), 33; acute infection, 22.8; cerebral birth injury or residue, 15.4; spasmophilia or tetany, 13.6; miscellaneous, 8.8; and cause unknown, 6.4. Taking the period of infancy in more detail, Dr. Peterman shows that with six to thirty-six months as the age of onset acute infection heads the list with nearly 30 per cent., and spasmophilia is next with 22.4 per cent. His cases have been very fully analysed, with investigation of the blood chemistry when necessary, so that in this series tetany looms larger than in the French report. "It is only when the convulsions recur," he writes, "and after various unrelated stimuli and when all organic lesions are excluded, that the diagnosis of idiopathic epilepsy is made." With this strict method of diagnosis Dr. Peterman is able to select three cases in the first month of life and a further five between one and six months of age as definitely epileptic. It is obvious, therefore, that although the percentage of such cases in the whole series is small, the occurrence of epilepsy among babies with convulsions cannot be excluded, and time must elapse before a final statement is made. A conclusion drawn by Dr. Peterman may be quoted to summarize the whole matter: "It is obvious that a convulsion is only a symptom, the final explosion of a complex reaction, the trigger mechanism of which may be a number of factors. . . . I wish simply to point out that there are certain disease entities which create in a patient a susceptibility to the convulsive state." While disagreeing in detail the French and American views are united on this point.

[1] *Presse Méd.*, June 2nd, 1934, p. 895.
[2] *Journ. Amer. Med. Assoc.*, May 26th, 1934, p. 1729.

CHEVALIER JACKSON AND ENDOSCOPY

Killian has been called the "Father of Bronchoscopy," and, as the title indicates, he originated endoscopic methods upon which all later work has been founded. There is, however, no one either in the past or in the present who has contributed so much to the advancement and development of endoscopy as Dr. Chevalier Jackson. When *Peroral Endoscopy and Laryngeal Surgery*, completed in 1914, was published in 1915, it seemed as though no further territory remained to be explored and conquered by the endoscopic method, to such perfection had its technique been brought by Dr. Jackson and his staff. That book will always remain a milestone in the history of laryngology and a treasured possession of the fortunate, but when Dr. Jackson, in collaboration with his son, presents, twenty years later, *Foreign Body in Air and Food Passages*[1] it is interesting to endeavour to trace in what direction subsequent advances lie. The book in question makes no attempt to cover the whole field of endoscopy, but it is in the localization and removal of foreign bodies that the great triumphs have been won, and it is here shown how close the collaboration between the radiographer and the endoscopist must be. The sixteenth volume of the *Annals of Roentgenology* is much more than an atlas of *x*-ray pictures, which is all that it claims to be. Selected from a study of 3,000 cases of foreign body in the air and food passages, in order to illustrate the different pathological effects produced, the difficulties in finding opaque foreign bodies, the methods of recognizing the presence of non-opaque foreign bodies, the necessity of lateral in addition to antero-posterior views and sometimes of views from intermediate angles, and the possible errors in localizing foreign bodies which are plainly visible, the pictures, with the comments and the lessons which they teach, are an endoscopic education in themselves. The chapter at the end on fluoroscopic endoscopy for removal of foreign bodies which are endoscopically invisible shows how close and perfect this collaboration can be, and with what ingenuity the latest model of biplane fluoroscope had been constructed. Figure 137 and those immediately following need no comment beyond the simple statement that a bar pin is shown deep in the lower lobe of the right lung. The

[1] Chevalier Jackson and Chevalier L. Jackson: *Ann. of Roentgenol.*, vol. xvi. New York: Paul B. Hoeber, Inc. 1934. (Pp. 265; 236 figures. 12 dollars.)

case was published as beyond the limits of bronchoscopy in 1907, the patient being a woman then aged 18. In 1930 extensive pathological changes were seen to have developed in the intervening twenty-three and a half years. Yet the pin was removed in two and a half minutes from the patient at the age of 43—a demonstration of the progress made in the technique of bronchoscopy. That foreign bodies hidden in the extreme periphery of the lung, even in the costo-phrenic angle, can now be removed endoscopically provided that the skill, the equipment, and the collaboration are available seems to leave nothing fresh to be accomplished in the art of removing foreign bodies.[1] Future advance seems to be in the application of endoscopic methods to the treatment of morbid processes, but it remains for the few to whom opportunity is given to maintain the exacting standard which Dr. Jackson has set.

THE STUDY OF ANIMAL BEHAVIOUR

Several of the papers presented to the British Association at its meeting in Aberdeen, and of the discussions following thereupon, have emphasized the fact that the results of scientific analysis, especially in physics and physiology, must be taken simply for what they are, and not regarded as ultimate realities by a summation of which the whole, particularly the organic whole, can be reconstructed or explained. In biology, for example, it is found to be essential to study the organism as a whole and not simply its component parts or systems. This tendency of present-day science is, in fact and in effect, a harking back to common sense. On August 25th last (p. 361) we noticed an important book entitled *The Behaviour of Animals*, by Dr. E. S. Russell, in which this point of view in relation to its subject was admirably expounded and illustrated. In his presidential address to the Section of Zoology Dr. Russell made an excellently clear and reasoned statement of the same thesis. It was a noteworthy utterance to which the attention of all who are interested in the teaching or the study of biology and physiology should be directed. He contests alike the dualism of mind and matter, the mechanistic explanation of all physiological processes, and the underlying assumptions of the stimulus-response theory of animal behaviour. It is necessary to get back from Descartes to Aristotle. "Instead of being the most concrete of realities, both matter and mind are highly abstract concepts, the product of the reflective intelligence working upon the data of immediate experience. There is given in individual experience only the perceiving subject and his objective world. This dualism does not correspond with the dualism of matter and mind." The complete phenomena of life are shown only by individuals or organized unities. Moreover, "all living things pass through a cycle of activity which normally comprises development, reproduction, and senescent processes leading to death. The life-cycle is in each species a definite one, passing through a clearly defined trajectory, admitting of little deviation from normality." The behaviour of a living thing is, therefore, the activity of the organism "as an intact and unitary whole," and is directed towards an end, the completion of the normal life-cycle. This directiveness need not be consciously purposive, but it shows a certain measure of adaptability, and often the power of learning and profiting by experience. The "plain tale" of animal behaviour, as Professor Lloyd Morgan has recently called it, must start by direct observation of the animal in its natural surroundings, and should be continued in experimental conditions which approximate as nearly as possible to the normal; and the whole life-cycle of activity, not merely isolated parts of it, must be regarded as the primary thing. Analysis is justifiable and useful but lets slip the essential thing, the continuity and directness of actions taken as a whole. "A very great part of the behaviour of animals is response to needs (or deviations from normal) and not to direct external stimulation. . . . A good deal of what ranks nowadays as experimental biology is not biology at all, but physico-chemical research carried out on organic systems with complete disregard for the distinctive characteristics of such systems." Similarly, Dr. Russell points out, though we cannot know exactly what the quality of an animal's perception is, its response is not usually to separate physico-chemical stimuli, but to the perceptual field as a whole or to relations, patterns, or general images. This method for the study of animal behaviour is likely to be the method of the future and must have very important reactions not only upon the relation of biology to medical education, but even upon the teaching of human physiology.

MEDICAL TERMINOLOGY, INTERNATIONAL AND NATIONAL

A correspondent of the *Münchener medizinische Wochenschrift*,[1] after a passing reference to the present precarious position, in the school curriculum, of the study of Latin—already eliminated in some of the countries speaking a Latin-derived language, and in others threatened because of its alleged uselessness in comparison with the time taken up by its study—alludes wistfully to the happy position enjoyed, in the Middle Ages, by the possessor of a working knowledge of the Roman tongue. For this reason, rather than for the stock reasons which are put forward for the retention of instruction in Latin—the intellectual exercise, the enlargement of the intellectual horizon, the assistance given in mastering modern languages of Latin derivation—the writer is all for keeping Latin teaching alive. Possessing eight modern languages, he nevertheless finds it impossible to read a large proportion of modern scientific literature. Three or four centuries ago all that was of value would have been accessible to him after the learning of one foreign tongue only; but scientific literature, unfortunately, becomes nowadays less cosmopolitan and more "nationalistic." The nationalist quality of terminology in German medical literature has indeed become a source of difficulty not only to the investigator who seeks to refer to the work, often most valuable, of German authorities in similar fields, and to the medical journalist in particular, but also, as it would appear from a note in the same issue of the *Wochenschrift* by Professor Enderlen of Stuttgart, to the German medical man himself. Enderlen, reading a review of a surgical treatise, noted four "Verdeutschungen" which left him—a good German, as he says—in doubt concerning

[1] Chevalier Jackson and Chevalier Laurance Jackson: *Arch. of Otolaryngol.*, June, 1932, xv, 860.

[1] February 16th, 1934, p. 256.

the meaning of these " Germanizations " of anatomical (classical) terms. Further, as he slyly remarks, a reference to a German-French dictionary convinced him that a French medical reader would be equally at sea. The retention of Graeco-Latin forms of nomenclature is therefore recommended, as simplifying international, and even also national, understanding. In an appended note the editor of our contemporary lends the weight of his authority to the retention of classical terminology. Nevertheless, he is against the incorporation, in German medical literature, of a jargon of new foreign terms from contemporary foreign literature: if noteworthy, he thinks, they deserve translation into good German. He would even purge his country's archives of the French or English terms, such as " défense musculaire " or " missed abortion," which have already crept in and been accorded general understanding. It is with some regret, it would seem, that he rejects as Utopian the counsel that we should revert to Latin as the universal language of medical science: thus we might at once make the world-literature accessible at its sources to the educated person, and exclude from it the uneducated laity.

RED CROSS AND ST. JOHN

A wide range of activities is reviewed in the report for 1933 of the Joint Council of the Order of the Hospital of St. John of Jerusalem and the British Red Cross Society. Through the auxiliary hospitals for officers department, assistance was given to 256 officers, of whom eighty-one were new cases; 18,402 have now been helped since 1914. As in recent years tuberculosis was responsible for a large proportion of the claims, but relief was also afforded to surgical, medical, and convalescent patients by admitting them to the hospital at Brighton. Ministry of Pensions patients are received on payment; others contribute towards their maintenance, while some who are destitute are admitted free of charge. Help has also been given to ex-officers who, while able to trace their illness to war service, cannot produce a continuous medical history which would establish their claim on the Ministry of Pensions. The cases now dealt with are usually in more advanced stages than has been usual hitherto, by reason of the prevalence of ill-health, failing employment, and insufficient food. Another department, the central bureau of hospital information, has been very active. Eleven memorandums have appeared relating to such subjects as accommodation for paying or private patients, financial arrangements for orthopaedic patients, the medical staffs of small general hospitals, particulars of consumption and cost of water supplies, and the provision of hospitals with milk. The 1933 edition of the now well-known *Hospitals Year Book* won general approval as a compendium of useful information about the various sides of hospital administration. The committee in charge of comforts, ward industries, and stores made 275 grants in response to applications from Ministry of Pensions hospitals and other institutions; about 450 men were enabled thus to receive training in handicrafts. Conveyance to entertainments was arranged for over 9,000 patients; since 1920 well over a quarter of a million have had transport without a single accident. The Emergency Help Committee has assisted 12,725 cases. Refunds of loans amounted to £4,440; the total repayments since the inception of this scheme total £137,895—a sum sufficient to maintain this work on its present basis for more than two years. The home service ambulance committee reports that 120,343 patients were carried in the twelve months, some being invalids requiring treatment and others accident cases. There are now in the country 153 ambulances equipped by the committee, and 169 other ambulances affiliated to the service. Last year gifts were made of 157,000 books, 82,000 magazines, and 250,000 newspapers. Yet the demand by institution libraries grows greater still, and further gifts of this kind will be welcome.

THE GUTTADIAPHOT

Tests involving the examination of the blood in tuberculous patients are increasing in number, if not always in usefulness. The somewhat barbaric-sounding term of " guttadiaphot," signifying " the picture of a drop in transmitted light," cloaks a method of capillary analysis first introduced in Germany by Meyer, Bierast, and Schilling, and consists in placing drops of the patient's blood on specially prepared strips of blotting paper (divided into red, green, and blue squares), and examining the stains so obtained some hours later by direct and transmitted light. Certain features of colouring, outline, and consistency are found to be associated with abnormalities of the blood in systemic diseases. Piechaud, Dutrénit, and Guibert[1] give a very extensive account of the history, theoretical basis, technique, and applications of this method, with special reference to tuberculosis. If certain precautions in the carrying out of the test are taken, the interpretation of the pictures obtained offers no difficulty with a little practice. The test is considered particularly useful in anaemic conditions, and is stated to be more sensitive than the Wassermann reaction, especially in treated cases. In pulmonary tuberculosis the results do not appear to be clear-cut or very helpful, but the authors found a direct relation between the results of the test and the temperature curve, and an even more striking one with the sedimentation rate. The positive results obtained are not entirely accounted for by the anaemia often found in consumptives. The test is recommended as a simple and ready means of detecting that " something is wrong " for the practitioner " in the country " to whom more complicated methods of examination are not easily available. A bibliography consisting of some fifty-five references is added.

At a medical meeting at Frankfurt a/M, held from September 2nd to 9th, under the presidency of Professor W. Kolle, the Paul Ehrlich gold medal was awarded to Dr. Walter Kikuth. At the age of 38 Dr. Kikuth has succeeded in performing an enormous amount of useful work culminating in chemotherapeutic discoveries of great importance. Atebrin and its specific action upon the malaria parasites, especially the subtertian form, was worked out by him by comparative studies on the malaria-like parasites of the canary and the Java sparrow. Dr. Kikuth is now the head of the chemotherapeutic department of the I. G. Farbenindustrie at Elberfeld in succession to the late Dr. Roehl. He is also attached in an honorary position to the Medical Academy at Düsseldorf. Dr. Kikuth was born in Russian territory at Riga and, after commencing his studies at Dorpat, he was able to complete them in Germany after the Russian revolution.

[1] *Journ. de Méd. de Bordeaux*, June 30th, 1934, p. 485.

THE BRITISH ASSOCIATION

ANNUAL MEETING IN ABERDEEN

The 103rd annual meeting of the British Association for the Advancement of Science was held in Aberdeen from September 5th to 12th under the presidency of Sir James Jeans, who had been elected to the post left vacant by the death of Sir William Hardy. The Association had previously met in Aberdeen in 1859, when the late Prince Consort presided, and in 1885 under the presidency of Sir Lyon Playfair. A message from the King expressed his confidence that the investigation of the manifold problems confronting present-day scientists would continue to be productive of results which would benefit mankind. Professor W. W. Watts was elected to preside over the Norwich meeting next year.

PRESIDENTIAL ADDRESS

Sir James Jeans commented on the amazing changes in outlook which had occurred in the full half-century that had elapsed since the presidential chair had last been occupied by a theoretical physicist in the person of the late Lord Rayleigh, and compared the department of theoretical physics to a building brought down in ruins by a series of earthquakes. New facts of observation had wrecked previous conceptions, which were founded not upon the solid rock of ascertained fact but upon the shifting sands of conjecture and speculation. The fundamental mistake of the old-time physicist was that he had failed to distinguish between the half-truths of parables and the exact truth. Physical science obtained its knowledge of the external world by a series of exact measurements, or, more precisely, by comparisons of measurements. Knowledge of the external world must thus always consist of numbers and the synthesis of this knowledge be mathematical in form. The modern physicist accepted this implication, and distinguished between observable facts and pictorial parables. Space and time could no longer be classified as realities of Nature, and the generalized theory of relativity showed that the same was true of their product—the space-time continuum. This had destroyed the Newtonian conception of a rigid universe and the derived doctrine of mechanistic determinism. Modern theoretical physics set before itself the modest task of reducing to law and order the impressions which the universe made on the human senses. It was concerned with appearances rather than with reality, and the task of the physicist resembled that of the map-maker rather than that of the geologist or mining engineer. Theoretical physics had produced two maps—the particle-picture and the wave-picture. The first was a materialistic picture, catering for those who liked to see their universe mapped out as matter existing in space and time. The wave-picture had a determinist character, catering for those who asked the question: "What is going to happen next?"

After elaborating this point, Sir James Jeans came to what he termed the central and most surprising fact of the whole situation, which he thought would lead to most surprising changes in the views held of the universe as well as of the human race. The modern conception that a system of waves best depicted in a graphic form the knowledge gained of the constituents of the universe had revealed the central fact that this wave-parable had shown these waves to be Nature itself. The Nature studied was not objective, consisting of something perceived, but was rather the perceptions themselves. There was no clear-cut distinction between subject and object: they formed an indivisible whole which now became Nature. In the old physics the perceiving mind was a spectator merely; in the new physics it was an actor: the perceiver and perceived, were interacting parts of a single system. The old physics seemed to indicate that personal ideas of free will were erroneous, and that freedom was an illusion; the new physics implied that this might not be so, and that it was possible to mould events to human desires and to live lives of emotion, intellect, and endeavour. Both materialism and matter needed to be re-defined in the light of the new knowledge. The full-blooded matter and the forbidding materialism of the Victorian scientist had given place to a movement in the direction of philosophic idealism. Mind and matter, if not proved to be of similar nature, had at least been found to be ingredients of one single system. There was no longer room for the kind of dualism which had haunted philosophy since the days of Descartes. Photons were no longer to be regarded as single individuals each going its own way, but as members of a single organization or whole—a beam of light. Biologists were beginning to state, though not very unanimously, that the same might be true of the cells of the body. It was conceivable also that the same might be true of the perceiving minds, and so human individuals might form ingredients of a continuous stream of life, even though regarding themselves as obviously distinct persons when viewed in space and time.

Defending scientific progress against the charge of causing unemployment in industry and wars, Sir James Jeans said that it was obvious that a country which fell behind in such advance would soon also fall behind in its industries, its economic position, its naval and military defences, and its culture. Labour-saving devices and what was termed pure science might ultimately lead to new trades and new popular demands, providing employment for vast armies of labour. A balance must be maintained, however; for a steady flow of lavour-saving devices, with no accompanying flow of new industries to absorb the labour thus displaced, could only lead to unemployment and chaos in the field of labour. At present the want of balance tended towards unemployment, and the great need of the moment was for industry-making devices. Employment for millions of men had been provided by Faraday's electro-magnetic induction, Maxwell's Hertzian waves, and the Otto cycle, while the economic value of one scientist alone, Edison, had been estimated at three thousand million pounds. Unhappily, no amount of planning could arrange a perfect balance, but the throttling down of science would only crystallize the community in its present state with nothing to do but to watch its population increase, and shiver as it waited for the famine, pestilence, or war which must inevitably come to restore the balance between food and mouths, and land and population. Was it not, therefore, better to press on efforts to secure more wealth, leisure, and dignity of life for our own and for future generations, even though risking glorious failure, than to accept inglorious failure by perpetuating the present conditions in which these advantages were the exception rather than the rule?

HARDY MEMORIAL LECTURE

Sir Frank Smith, Secretary of the Department of Scientific and Industrial Research, paid a warm tribute to the work performed on behalf of the Department by Sir William Hardy in the last seventeen years of his life with special respect to the research into the transport and storage of foodstuffs. He described the way in which the Department's Torry Research Station at Aberdeen, founded by Sir William, was likely to help the fishing industry to regain its prosperity. The recent report of the Sea Fish Commission had stressed the highly perishable nature of the herring. Those caught more than twenty-four hours before landing were known in the trade as "overdays," and were inferior in quality—a fact which led to the important industry of kippering, and partly explained why the kipper was the most popular form of herring with the public. The fish was smoked nowadays, as heretofore, over smouldering fires of sawdust, a process which was at the mercy of the weather, and depended largely on the craftsmanship of the smoker, the antiseptic substances in the smoke, the range of temperature, and the dampness of the drying atmosphere. Each of these variables had been separately investigated at the Torry Research Station, and a new type of smoking kiln had been designed to control them. With its aid any desired type of cure could be produced with certainty. Home waters were unable to cope with the demands of the market for good white fish, such as cod, halibut, and plaice, though there were now about 1,600 trawlers fishing from British ports and landing each year nearly 1,700,000

tons of fish. Far too large a proportion of the fish landed was stale. Mere chilling in crushed ice was ineffective, but the Research Station had found a possible way out in the form of freezing the fish in cold brine at a temperature of −20° C. The growth of bacteria was thus completely arrested, and if the fish was stored at this temperature it would keep perfectly fresh for three months.

Sir Frank Smith discussed the immense progress made in the science of refrigerating foods during the last fifty years. Thanks largely to the work of Sir William Hardy, it was now recognized that the biologist should formulate the conditions required for the satisfactory storage of various forms of foodstuffs, and that the engineer should then provide these conditions. In the case of meat, for example, deterioration was due to enzymes or organisms naturally present in the meat itself, and secondly to the growth of moulds and external bacteria. The first could be entirely prevented by cold, but the second depended on the initial contamination to which the meat had been exposed, unsaleability resulting when the bacterial population reached a density of over 30 million organisms in each square centimetre. The importance of cleanliness was therefore manifest, for freezing produced changes which were likely to damage the meat. This risk was negligible in the case of mutton, lamb, and pork, but rendered freezing as distinct from chilling unsatisfactory for beef. The work at the Department's Low Temperature Research Station had shown that at temperatures near freezing point a concentration of 10 to 20 per cent. of carbon dioxide so delayed the growth of micro-organisms as to double the life of the beef. Hardy and his colleagues had found that different kinds of fruit exhibited idiosyncrasies as regards preservation. It was largely the intolerance for cold shown by the British apple which accounted for the fact that for about nine months of the year the table apples in this country came from over-seas, although some of these were gathered at the same time as the home-grown apples. Sir William Hardy had solved this problem by storing the fruit in a definite percentage of carbon dioxide, while the temperature of the store was kept well above freezing point. This discovery had opened a new era in the storage of English apples, and there were to-day thirty-two such gas stores in this country with a total capacity of 7,000 tons. The rate at which these were being erected was rapidly increasing. The brilliant work which Hardy had inaugurated and directed had been of enormous advantage already, and it was still extending.

COLOUR VISION

Professor H. E. Roaf, president of the Section of Physiology, in an address on normal and abnormal colour vision, discussed the validity of the trichromatic hypothesis, the nature of the departures from colour vision in those with colour-blindness, and the nature of the colour-perceiving mechanism. He said that if it was to be taken as true that three types of sensory mechanism were sufficient to account for colour vision one of the four colours red, yellow, green, and blue must be due to stimulation of at least two of the other ones. For several reasons yellow had been chosen as the heterogeneous one. Experimental evidence was forthcoming that a red stimulus to one eye and a green to the other gave a sensation of yellow, this result being obtained even with lights from the spectrum. Since the unitary sensations yellow, white, and black could be built up from stimuli associated with other sensations, it was possible to reduce the number of data for colour perception to three, and there was no real objection to the trichromatic explanation of colour vision proposed by Thomas Young. Abnormal colour vision might be congenital or acquired; the usual form was congenital, and did not alter through life. The defect seemed to consist in a decrease in the ability to distinguish red from green, and the patients (hypochromats) distinguished fewer colours than the normal (euchromats). They were often described as having blue-yellow vision, or of distinguishing in the spectrum blue from not blue, whereas the normal person subdivided the not blue into red and green. Since yellow occupied the region between red and green, the defect was most noticeable in the yellow region of the spectrum, especially in the milder degrees of the defect. The hypochromat seemed to have only two types of colour receptor organs, whereas the normal person had three. The threshold for light was not necessarily altered, and it was possible for hypochromats to see clearly through a filter which only permitted the passage of the red end of the spectrum. In fact, a hypochromat who could not see red geraniums among green leaves could distinguish the flowers as light objects against a dark background when looking through a red glass filter.

Professor Roaf thought that the trichromatic hypothesis implied, as stated by Young, the presence of three types of receptors linked with three groups of nerve fibres in the optic nerves. It did not seem likely that there were three photo-active substances which were acted on by the long, medium, and short wave-lengths of the visible spectrum; only one photo-active substance, rhodopsin or visual purple, had as yet been found. Professor Roaf added that his own work had led him to believe that the types of receptors which were stimulated by visible radiation were as follows: (1) one which was stimulated by all parts of the visible spectrum, and gave rise to a sensation of violet when stimulated strongly by itself; (2) one concerned with the not-blue aspect of vision of the hypochromat; and (3) one which functioned in normal vision, distinguishing red from not red. In some persons the activity of one of these types was reduced or absent, giving rise to varying degrees of defective colour vision.

NUTRITION AND DISEASE

In the Section of Physiology Professor L. S. P. Davidson read a paper on nutrition in relation to anaemia, and a joint symposium was also held with the Section of Agriculture on nutrition in relation to disease generally. Professor Davidson pointed out that in the last ten years there had been an unparalleled advance in knowledge regarding the relation of diet to blood formation. This had been the means of eliminating certain forms of anaemia completely, of bringing under therapeutic control others which were incurable, and of directing attention to others which had previously escaped notice. Before 1926 every patient with pernicious anaemia had died. To-day it was known that the essential cause lay in a failure of gastric secretion which prevented the patient obtaining from his food a principle which was essential for normal blood formation. Successful liver therapy had ensued. Of greater economic importance, owing to its great frequency, was the group of nutritional anaemias due to iron deficiency. Approximately 50 per cent. of infants and adult women of the poorest classes were anaemic. The principal factors were: (1) pregnancy, and loss of blood at the menstrual periods, leading to increased demands for iron; and (2) an iron-poor diet which failed to maintain adequate reserves to meet such eventualities. Dietetic therapy and the administration of iron salts rapidly and cheaply brought about a remarkable improvement in health, with a corresponding gain in economic efficiency and resistance to disease.

In the symposium Dr. J. B. Orr said that recent investigations had indicated that nutrition as determined by diet was now probably the most important factor affecting the health of the community. He suggested that the present generally accepted standards of health were too low. If the necessary measures could be taken to ensure that every member of the community had a diet which was fully adequate for health, the next generation would be endowed with a better physique, and be freed from much of the disease and indefinite ill-health which afflicted the present generation.

Professor J. J. R. Macleod said that the discovery of deficiency diseases had made great strides, but the most important problem awaiting elucidation was to determine to what extent more general diseases in man might be similarly related to nutrition. There was evidence that diabetes, anaemia, and goitre were nutritional diseases, and probably other maladies were attributable to faulty dietetic habits.

Dr. May Mellanby remarked that, as regards dental caries, which was almost universal in civilized countries,

a new outlook had emerged during the last fifteen years. Faulty nutrition, especially in early life, was the cause of defective structure, which in its turn predisposed towards caries. To ensure good structural development the diet of the mother during pregnancy and lactation, and of the child after weaning, must include abundant calcium and phosphorus, and the specific calcifying factor vitamin D. Cereals contained anti-calcifying toxamines; their consumption must therefore be limited. Vitamin D helped to prevent and arrest caries even in imperfect teeth. Beautiful teeth, almost free from caries, were found in Eskimos (who obtained their vitamin D from blubber) and in the natives of the Tropics, in whom breast-feeding was prolonged, and vitamin D was gained by exposure of the whole body, especially while young, to the ultra-violet rays of the sun. With the adoption of the diet and clothes of civilization the teeth of these peoples deteriorated rapidly, so heredity was not a fundamental factor. The incidence of pyorrhoea could be reduced by giving abundant vitamin A, especially during the earlier years of life, in the form of liver oil and green vegetables.

Professor S. J. Cowell enlarged on the vicious circle in which malnutrition due to faulty feeding led to disease, and disease in its turn to imperfect nutrition. Deficiencies exerting their effects in early life might lead to faulty development of tissues which could not later be restored to health, thus predisposing to disease in later life. Other diseases might result from some inherent or acquired incapacity of the body to deal in the normal way with essential food factors actually supplied in the diet. When it was remembered that foods in common use might be sources of positively harmful substances, as well as be deficient in beneficial substances, it was obvious that the construction of ideal diets required greater knowledge than was at present available.

Reviewing nutrition in relation to diseases of the larger domesticated animals, Dr. H. H. Green stated that vitamin deficiencies were rare, but mineral deficiencies were of enormous economic importance throughout the world. On [illegible] acres of grazing land throughout the Em[illegible] content of the pasture, most [illegible] content, was the limiting factor. [illegible] attention was drawn to the [illegible]actions of different species of [illegible]f dietary deficiency, and to the [illegible]eases which presented the same [illegible]s the bovine species developed [illegible]ertain pastures on which the [illegible]e. Cattle, sheep, and [illegible]or years on a ration [illegible]nea-pig in a month. [illegible] a question of the [illegible]f the species of the [illegible]of generations over [illegible]

[illegible]xperiments which revealed [illegible]n helminth infestations of [illegible]ials, and indicated possibilities of reducing the consequent losses. Evidence that the degree of parasitic infestation in lambs had a direct bearing on the nutritional state of the animal had been obtained as the result of a survey in Scotland. Experiments performed at the Rowett Institute on the effect of nutrition on the susceptibility of sheep to worm invasion were described, and the total evidence that the nutritional condition of an animal was closely related to its susceptibility to helminthic infections was summarized.

(To be concluded)

The annual report for 1932 of the Native Affairs Department of Kenya Colony and Protectorate has just been issued by H.M. Stationery Office, price 3s. (postage extra). The chapter on medical matters and public health occupies eighteen pages, and gives in summary an account of the work of the medical department among the natives. There is also an appendix outlining in tabular form a health scheme for native reserves with hospitalization on the basis of one bed per thousand of population.

THE BALANCE SHEET OF THE VOLUNTARY HOSPITALS

If Mr. Micawber's traditional remark holds good, the voluntary hospitals of this country should be in a state of happiness. *The Hospitals Year-Book*[1] sums up in three figures the position of voluntary hospital finance for 1932 (the latest year for which complete returns are available). In that year the hospitals of Great Britain and Ireland received £15,258,897, and spent £14,512,800, leaving a surplus of nearly three-quarters of a million. The Scottish hospitals had the lion's share of the surplus—namely, £287,000—but those of London had nearly as much (£263,000). It has sometimes been said by hospitals that a debt is an asset, but it now appears that the belief in the appeal value of an adverse balance is dying out. Hospital chairmen at their annual meetings express thankfulness that the year has ended with something to the good, and wealthy people—or, let us say, people belonging to the contributing classes—are now more inclined to give to hospitals which budget ahead and cut their coats according to their cloth. Of prudent Scotland's 105 hospitals only twenty-nine ended the year with a deficit.

Another gratifying feature of the hospital position is the steadiness of voluntary giving. In London the voluntary gifts per available bed worked out at £83, an increase of £3 on the year. Patients' contributions rise from year to year, and in the year under review represented £68 per available bed. Public services, interest on investments, and extraordinary income brought up the total amount received per available bed in London to £235. These figures also hold good, more or less, for the special group of London teaching hospitals, except that here the total income per bed was £282, the increase being accounted for almost wholly by the larger income on investments. In the rest of Great Britain and Ireland voluntary gifts accounted for about £65 per available bed and patients' contributions for £24. The 158 hospitals in London received just over half a million in legacies in 1932.

MAINTENANCE COSTS

On the other side of the ledger the cost per bed of maintenance in London—the cost of the out-patient department being included in all these computations—was £228, of which salaries and wages accounted for £85, domestic expenditure (furniture, bedding, laundry, fuel, and light) for £38, provisions for £32, and surgery and dispensary (drugs, dressings, instruments, and so forth) for £27. In the English provinces the cost of maintenance was £132 per bed, in Scotland £121, and in Ireland £90. Curious variations appear in the weekly cost of in-patients, even in so uniform a group as the twelve teaching hospitals of London. At the London Hospital the average weekly cost is just over £5; at University College Hospital only £3 5s. If we take the provincial hospitals with medical schools, we find that at Manchester Royal Infirmary, where the figures are the highest, the cost is £3 10s., and at Sheffield Royal Infirmary only just over two guineas.

Some interesting conclusions may be drawn from the costs for voluntary and municipal hospitals respectively. In the general hospitals of the L.C.C. the average cost per in-patient per week varies from £4 14s. at Mile End to £2 12s. at Lambeth, and, among municipal hospitals in the provinces, from £3 10s. at Selly Oak, Birmingham, to £1 11s. at Newcastle-upon-Tyne—institutions comparable both in respect to number of beds and to staff.

NUMBERS OF PATIENTS

From these well-marshalled figures we get an impressive picture of the hospital population. In the 973 hospitals giving details the number of new in-patients in 1932 was 1,206,789, and of new out-patients 5,387,888. One in four of the in-patients and more than one in three of the out-patients were at hospitals associated with medical

[1] *The Hospitals Year-Book, 1934.* London: Central Bureau of Hospital Information, 12, Grosvenor Crescent, S.W.1.

schools. As yet there seems to be no definite movement one way or the other to show the effect of the recent consideration that has been given to the true function of the out-patient department. Reference is made to the movement for more pay-bed accommodation, and a short list is included of about a score of contributory schemes for paying or private wards, of which that of the British Provident Association is the most important, aiming to provide, by means of insurance, cover sufficient to meet hospital charges, with proper remuneration for the doctor. Other useful information concerns the manner in which about one hundred small general hospitals—no doubt representative—appoint their medical staffs. So far as their general wards are concerned, seventy-three of these have a restricted honorary medical staff, in which appointments are limited in number and candidates have to submit themselves for election; in eighteen others any practitioner in the area is eligible for membership of the staff; in five the senior posts are filled by visiting specialists (not local practitioners), but any practitioner in the area is eligible for membership of the staff, and in seven there is partial restriction—that is to say, residence within a defined area, but no restriction in number of staff appointed. Information as to their private wards is afforded by fifty-two of these hospitals. In twenty-four, although there may be restrictions in the general wards, any practitioner in the area served is at liberty to treat his own patients in the private wards, and in the other twenty-eight the same conditions apply in the private as in the general wards.

General Information

A word should be said about the encyclopaedic character of this publication: If it is desired to know how many hospitals possess their own laundries, what the experience is with regard to the efficiency of synchronized clocks, how much hospitals pay for their milk, what methods are favoured for the disinfection of wards, how food is commonly conveyed from kitchens, the number of times the lighting of operating theatres failed at certain hospitals, the steps taken to prevent cripples from slipping on hospital floors, the conditions governing the use of the premises of hospital supplies of radium, the bill for replacements of broken crockery, the weekly wage of hospital porters, the incidence of tuberculosis among nurses, the dates of foundation of the various hospitals, or particulars of the fourteen British hospitals on the Continent—these and a thousand other details are readily obtainable.

India

Pasteur Institutes

In the absence of any compendium of reports on the Pasteur Institutes of India it is excusable, though regrettable, that recognition of the excellent work therein accomplished year by year is not more widespread. The annual reports of some reach England from time to time, but mention of the activities of others is only to be found in the reports of Government medical officers, which are often very belated. The report has recently been received for 1932–3 of the Institute at Kasauli, which, with its various subsidiary centres, dealt with 15,118 patients in the twelve months, an increase of nearly 3,000 on the previous year. The period under review is regarded as being especially important, since it was the first in which the results accruing from researches covering several years could be given a practical therapeutical trial. It had been shown that large doses of antirabic vaccine were superior to small ones in preventing rabies, and that, as found elsewhere, the Paris strain of rabies-fixed virus had better antigenic value than the Indian strain. Consequently during 1932 the Paris virus alone was used in manufacturing vaccine, and a scale of dosage was devised which ensured a much higher average dose of vaccine for each patient than had previously been in use. The result was that the total number of deaths from hydrophobia was over 27 per cent. less than in any previous year since comparative statistics were available, and this in spite of the fact that the number of patients coming for treatment was much greater, indicating a distinct advance in the method of treatment. There were no cases of post-treatment paralysis. The annual report for 1932 of the director of the Pasteur Institute of Southern India at Coonoor is published with the twenty-sixth annual report of the Central Committee of the Association. Here also there has been a profitable decentralization of treatment throughout the Madras Presidency, the States of Mysore, Travancore, Cochin, and Pudukottah, and the Nizam's dominions. The daily attendance at the Central Institute has fallen, therefore, the figure for the year being 566. Three of these patients died from hydrophobia after a complete course of treatment and one during it, the mortality rate being 0.7 per cent. The Paris-fixed virus was in use throughout the year. Antirabic virus was issued for 10,350 patients in the various centres; there were thirty-four deaths, and a mortality rate of 0.38 per cent., the lowest mortality rate on record at this institute, the decline being tentatively attributed to the use of the Paris virus, with the proviso that definite conclusions cannot certainly be drawn yet. During the twenty-eight years of existence of the Coonoor Institute 34,827 patients have been treated there, with a total mortality rate of 1.11 per cent. The success of the antirabic treatment is indicated by the steady increa[illegible] the demand for supplies. The Coonoor Institu[illegible]7 centres in charge of medical officers specia[illegible] therapy, and courses of instruction, last[illegible] are held from time to time. [illegible] these courses upon the practi[illegible] the result that the difficulties [illegible] out-centres, and especially in [illegible] have been greatly minimiz[illegible] the Pasteur Institute [illegible] at Cuttack appears [illegible] civil hospitals and [illegible] has been prepared [illegible] general of these [illegible] effected with the [illegible] suitable accommoda[illegible] and their relatives comin[illegible] vaccine can also be supplied by civil surgeo[illegible] requisition for patients not attending the I[illegible] During the year under review 4,112 patients a[illegible] the Patna Institute, as compared with [illegible] previous year. The corresponding figur[illegible] centre were 366 and 287.

Medical Training of Wom[illegible]

In the annual report for 1932 on the [illegible] and dispensaries in the Punjab, [illegible] Inspector-General of Civil Hospitals, [illegible] number of girls seeking admission to medi[illegible] schools is rapidly increasing. The accom[illegible] existing institutions is very limited, and [illegible] have to be rejected. It has for some ti[illegible] proposed to establish a separate medical schoo[illegible] at Lahore, but so far no steps have been take[illegible] Punjab Medical School for Women, with which is incorporated the Women's Christian Medical College for Women at Ludhiana, was hitherto the only institution on which

the Province depended for its supply of women doctors required for the charge of hospitals and dispensaries for women. To meet the growing demand among women for medical education of the degree standard, the system of co-education was introduced by the King Edward Medical College in Lahore in 1929, and extended to the Amritsar medical school in 1932. Up to ten places are reserved annually for women students in the former, and at the latter school the number has now been raised from ten to fifteen. The co-education system is reported to be working well. A large number of Punjab students are being trained in the Lady Hardinge Medical College at Delhi. In the year under review a noteworthy feature was the provincializing of the Lady Aitchison Hospital at Lahore. In Attock the Anant Ram Zenana Hospital was opened at Tallagang; the women's section of the Campbellpur civil hospital was placed in charge of a woman sub-assistant surgeon, and a travelling woman assistant surgeon was appointed for the district. In the Province there are now forty-four separate hospitals for women, and twenty-one sections for women in other hospitals, with women doctors attached to them. It is regretted, however, that the scheme for the provision of a women's hospital under a woman assistant surgeon at every district headquarters, and of a section for women at most of the tahsil headquarters hospitals, under a woman sub-assistant surgeon, is unlikely to be realized for a very long time, owing to the financial situation. Special efforts are being made to increase the number of Indian hospital nurses and of trained midwives, particularly in rural areas. In 1932, moreover, an Act was passed to provide for the registration and training of nurses, health visitors, midwives, and dais, and incorporating a Nurses Registration Council. The Punjab Central Midwives Board continued to supervise the training and examination of midwives, whose number is steadily growing.

Bombay Plague Epidemics

In 1932 there was a sharp increase in the plague mortality rate in the Presidency of Bombay, and this circumstance has caused Major A. Y. Dabholkar, I.M.S., Officiating Director of Public Health, to discuss recent epidemics of this disease in the course of his report on that year, which was otherwise a very healthy one, apart from a rise in small-pox. Since 1917, the year in which the highest mortality (162,874) was registered, plague has been decreasing in the Presidency, progressively on the whole, but showing well-marked exacerbations in certain years. In 1923 the deaths were 33,741, but in 1930 they had fallen to 5,026, and in 1931 to 3,506, so that the rise in 1932 to 14,446 was hardly expected, although it was generally thought that there might be some increase. The worst affected district was Belgaum, with a death rate of 4.38 per 1,000 of population, and followed by Satara, with a corresponding rate of 3.09. Sind escaped entirely, and Gujarat, with the exception of Surat and Kaira, was almost free. In the southern registration district, where the heaviest mortality occurred, the epidemic curve began to rise in August, 1931; steadily increased until January, 1932, with an uninterrupted fall in the ensuing four months; rose from June onwards; and reached a peak in December. The curve followed the usual course, the off season for plague in this district generally covering April, May, and June. Rat destruction campaigns were actively conducted. A significant indication of their value came from Bulsar in the northern registration district, where rat destruction was continued into 1933. At the time of reporting in that year there had been no outbreak of plague in that town, hitherto much affected, or in any of the neighbouring villages, although the time for its expected recrudescence was then coming to an end. To combat the epidemic eleven medical officers were appointed on plague inoculation duty in the Presidency. The total number of persons inoculated in 1932 was 417,657, as compared with 112,025 in the previous year. Medical officers in charge of hospitals and dispensaries as well as private practitioners co-operated actively in the campaign. A statistical table of the number of deaths from plague since 1911 is given in the report. In the first year the figure exceeded 100,000, and it is apparent that this disease is gradually being brought under control, despite the occurrence of occasional epidemics, the mortality in which is definitely diminishing. Figures are also given showing the immunity conferred by inoculation, the popularity of which is increasing with the spread of knowledge. The destruction of rats is being energetically pursued. Of sixteen examined in Bulsar eight were found to be infected, whereas in Bombay City only 691 were infected out of 272,230 examined.

England and Wales

Queen's Institute of District Nursing

A statistical report has been compiled of the midwifery cases undertaken by Queen's nurses and village nurse-midwives working in connexion with the Queen's Institute of District Nursing during 1933. The former numbered 1,000, an increase of fifty-one, and the latter 2,855, an increase of forty-one. A total of 64,144 cases were attended; this represents a decrease on last year's total, but it is partly accounted for by the fact that particulars of cases in Cumberland are not yet available; these were about 900 last year. Medical aid for the mother was sent for in 31.5 per cent. of the cases and in 5.4 for the infant. There were 4,553 forceps cases, a percentage of 7.1. The number of maternal deaths was 145, of which thirty-eight, or 26.2 per cent., were primiparae, and thirty-eight had had five or more previous pregnancies. This mortality rate is 2.26 per 1,000, as compared with 2.1 in 1932 and 1.7 in 1931. The rate is 2.3 per 1,000 in urban districts and 2.2 in rural districts. These figures represent 58,946 cases in England, with a maternal mortality of 2.3 per 1,000, and 5,198 cases in Wales, with a maternal mortality of 1.9. The following table shows the causes of these deaths for the years 1933 and 1932.

	No. of Cases	1933	1932
		Per cent.	Per cent.
Sepsis	49	33.8	28.5
Accidents of labour	37	25.5	29.2
Eclampsia	4	2.8	11.2
Embolism	20	13.8	6.3
Complications	35	24.1	24.3

Sepsis occurred in eighteen primiparae and in nine multiparae of five or more pregnancies, while accidents of labour numbered six in the former and fifteen in the latter. The percentage of primiparae in the series as a whole was 23.3. It is reported that ante-natal supervision continues to improve, although in many cases too few visits have been made during the last two months of pregnancy. Of the forty-nine deaths due to sepsis, seven occurred in forceps deliveries, in ten there was ruptured perineum, in six abortion had almost certainly been attempted, and four cases were infected by midwives. The thirty-seven accidents of labour comprised twenty-six of haemorrhage (including five cases of placenta

praevia, and seven of placental difficulty with manual removal in two instances), two cases of ruptured uterus, and nine of shock and cardiac failure. Cases of eclampsia declined from sixteen in 1932 to four in 1933, but there was a rise as regards embolism from nine to twenty. Of the embolism cases six had been delivered by forceps, five had histories of circulatory or cardiac troubles, and one patient was an alcoholic primipara. From several sources reports have been received of deaths caused by lowered vitality and lack of resistance to complications. The patients were not able to obtain sufficient nourishment during pregnancy, and some were living in overcrowded or otherwise unsatisfactory homes. In thirty-eight instances poverty-stricken homes were specifically mentioned. In one area it was stated to be difficult to obtain additional nourishment for expectant mothers on any but medical grounds, and it is submitted in the report that this should be available whenever the family income is insufficient to meet the added requirement of the mother during pregnancy. The number of maternity nursing cases (doctor engaged, midwife acting as maternity nurse) was 28,015, a decrease of 1,557 on the figure for 1932. There were 133 maternal deaths (4.7 per 1,000).

Health Work in Warwickshire

In a comparison of the more important statistical results for the year 1933 with those for the previous thirty years, Dr. Hamilton Wood, county medical officer of health for Warwickshire, points out that the birth rate for the year under review (13.71) is the lowest ever recorded in the county. He adds that if this fall continues, as it has done progressively since the high post-war rate of 1920, the time will soon be reached when the death rate, with its tendency to rise, will surpass it. The birth rate for England and Wales in 1933 was 14.4. There are nine ante-natal clinics at work in the county, but it is calculated that this service reaches only one out of every five expectant mothers who engage midwives for their confinement. Clinic provision would have to be doubled, therefore, to allow a substantial number of midwives' cases to have the advantage of medical ante-natal supervision. Since, however, there would still remain many expectant mothers in rural areas who would be unable to take advantage of this provision, Dr. Hamilton Wood considers that the question of introducing a domiciliary medical ante-natal scheme (as recommended in Memo. 156 of the Ministry of Health, 1930) might well be brought up. He remarks that a scheme of this kind is already operating in a number of county areas, and would appear to be the only practicable means of reaching the majority of expectant mothers engaging midwives for their confinements. Any such general practitioner service should not be in substitution for but in addition to the clinic facilities already provided in the more populous parts of the county. The county council has now in operation a scheme for compensating midwives in necessitous cases where the person engaging a midwife is unable to pay her fee, or where a midwife loses the whole or part of her fee in consequence of the patient's removal to hospital. It also provides compensation in cases where a midwife suffers financial loss as a result of suspension from practice owing to her being a possible source of infection. As regards rural water supplies, Dr. Hamilton Wood urges the importance of rural district councils discarding the parochial outlook and utilizing the resources of the district as a whole to fulfil a duty which in some cases has been sadly neglected for very many years. He adds that the financial side of the question should not be allowed to weigh too heavily against the advantages of a pure water supply, nor should the fact that a parish has a low rate of produce prejudice the rural district council in the fulfilment of its obligations.

The death rate from infectious diseases in 1933 was the lowest ever recorded, and no person died from typhoid fever. The pulmonary tuberculosis death rate rose slightly to 0.52, but the hope is expressed that this figure will fall in the next few years with improved housing conditions and better employment.

Ireland

Anthrax in a Slaughtered Cow

The medical superintendent officer of health, Dr. C. S. Thomson, in a report to the Public Health Committee, Belfast, illustrated the value of having only one abattoir in a city, and that one entirely under the municipality, with a fully qualified veterinary surgeon and staff in charge, supervised by the superintendent M.O.H. An animal was killed at Hillsborough, County Down, some twelve miles from Belfast, and was brought into the city to be sold to butchers for ordinary meat. The Belfast County Borough Council by-laws require that any meat brought into the city for that purpose must first be examined at the abattoir by the city veterinarian. On examination of this carcass the spleen was found to be somewhat enlarged. A smear was made, and the city veterinarian found that anthrax was present, although the carcass did not have the usual pathological signs of this condition. The carcass was burned, the meat inspectors were disinfected at the municipal disinfecting station, and all other necessary precautions were taken. Meanwhile, the city medical officer was informed that a man had been admitted from Hillsborough to the Royal Victoria Hospital with a malignant pustule, and investigation revealed that the patient was the man who had slaughtered the animal. The patient received prompt treatment and recovered. It is unnecessary to dwell upon the value of a system such as Dr. Thomson suggests.

Health of County Galway

In his annual report Dr. B. O'Beirne, county medical officer of health, states that 185 cases of diphtheria were notified in 1933, a decrease of six on last year's figures, the number of deaths being thirty-three, as against forty in the previous year. Fifty-nine cases are debited to the Galway urban area, although only eleven actually occurred there. The remaining cases were returned from the Galway Central Hospital, where the disease was endemic during the year, twenty-one being reported as "carriers." Efforts have been made to locate the source of the infection in this institution, and it now appears to be under control. The number of cases from the Galway rural district is high. This may be attributed to an outbreak in the Moycullen area, which became epidemic. As a result of investigation five "carriers" were discovered and isolated, and the outbreak was consequently checked. Tuam rural district has also a large number of cases, many of which occurred in the Abbey dispensary district; there are frequent occurrences of the disease in the Tuam districts. There have been no cases of typhus since 1930. Seventeen cases of enteric (or typhoid) fever were notified during the year—a reduction of four on last year's figures—with four deaths. There was no epidemic, the disease was sporadic, and in nearly all cases the source was attributed to the water supply. Ninety cases of scarlet fever were notified for 1933, as against 178 for 1932, and five deaths. Included in the sixteen cases debited to Galway urban area are two which were transferred from the general wards of the Central Hospital. Another case was that of a patient

from County Mayo, transferred from Bray, County Wicklow, where the disease was apparently contracted. Twelve cases of puerperal fever were reported in 1933, and twelve deaths. The six cases assigned to Galway urban area occurred in the maternity wards attached to the Central Hospital. Three cases of encephalitis lethargica were reported for the year under review, two being from the Galway urban area, and eighteen cases of erysipelas, four of which were transferred from the general wards of the Central Hospital. There is a disinfecting station, the property of the Board of Health, attached to the fever hospital, and a cleansing and disinfecting station, the property of the Galway Urban Council, at the docks. The latter is open to the general public, where baths, etc., are to be had for a small fee. There is a port sanitary authority and a port medical officer. In the case of the graver infectious diseases the ambulance takes the clothes to the fever hospital. A sack disinfector was purchased by the Board of Health with a view to having disinfection and disinfestation carried out on a large scale in outlying districts where there are epidemics of infectious diseases. The scheme, started in 1931, for active immunization against diphtheria is being continued in this county. In 1931 a total of 2,102 children received the full course of three injections, 1,206 in 1932, 1,607 in 1933, giving a gross total of 4,915. The reports from the various areas in which the scheme has been carried out have been most favourable.

County M.O.H. for Kilkenny

Commissioner P. J. Meghan, who is administering the business of the Kilkenny County Council, stated at a recent meeting that he had received a communication from the Local Government Department in reference to the appointment of a county medical officer of health. He said it was apparent, in view of the water supply and sewerage schemes in the different towns and villages in the county, and the housing surveys the Minister had requested, that a county medical officer was required. The question of school medical services was also of great importance. He proposed, therefore, to advertise for a temporary medical officer of health, at a remuneration of ten guineas a week with travelling expenses, to undertake the duties until such times as the Appointments Commissioners filled the permanent position. He had already made an order at the Board of Health regarding the new county school medical officer, so that 50 per cent. of the remuneration would be recouped from the grant for school medical services. With regard to the terms of the appointment, the Irish Medical Secretary wrote to the Commissioner pointing out that the temporary remuneration was altogether inadequate; he expressed the opinion that no candidate with adequate experience of public health administration would apply for the post at the remuneration offered, and, in the circumstances, it would be better if the Commissioner did not proceed with the temporary appointment. The temporary remuneration offered was £546 per annum with travelling expenses, as compared with £800 and travelling expenses for the permanent post. The Commissioner has now decided not to proceed with the temporary appointment.

"Gas in Housing and Slum Clearance," an illustrated pamphlet produced by the British Commercial Gas Association, serves as a reminder that town planning and slum clearance must be allied with the provision of an efficient and economical fuel if they are to succeed in bringing a better standard of comfort into the life of the working-class family. The pamphlet (No. 244 of "A Thousand and One Uses for Gas") can be obtained free from the office of the association, 28, Grosvenor Gardens, S.W.1.

CORRESPONDENCE

Pregnancy Diagnosis Station

SIR,—From a letter sent out as from the Pregnancy Diagnosis Station here to those medical practitioners whom it has served in the past it would appear that the station is closing down in Edinburgh and is reopening in London.

Actually this is not so. It is the case that, to my great regret, Dr. Wiesner, to whom is due all the credit for the inception and successful development of the station, is leaving this Institute and is moving to London, where he intends to continue his diagnostic and advisory work. But during the past five years the station has come to represent much more than the personal activities of one man; it has become a necessity to many practitioners, and though the man goes the service must continue. The laboratory here will not close down. At least it must continue to serve Edinburgh and the East of Scotland, and to do this it must serve a much wider area, for its efficiency must be largely determined by its size, and this must depend upon the number of clients. In efficient running, prompt reliable service, and low charges, several thousands of tests must be made annually. Its income must be sufficient to provide skilled medical supervision, an efficient technical staff, smooth routine, and, above all, sufficient data, for only then can the records possess any considerable scientific value. I have to hope, therefore, that this laboratory will be used by practitioners from all parts of Great Britain.

If the facts were better understood there would of course be room for more diagnostic laboratories than at present exist. It is irritating to recognize that even yet so very many practitioners either do not know that such a service exists in most of the larger cities, or, knowing, take no advantage of its existence. It should not be necessary to keep repeating that the tests now used yield an accuracy of not less than 97 per cent.; that pregnancy can be recognized as early as ten to fourteen days after conception; that the report on any given specimen can be dispatched after twenty-four hours, forty-eight hours, or five days, according to the particular test made; and that all that is required as test material is 50 c.cm. of morning urine.

The interest of this work is not commercial; it is to be found in the unusual and the exceptional; for in these cases is the seed of knowledge which, being disclosed, will contribute largely to the endocrine therapy of the immediate future.—I am, etc.,

F. A. E. CREW.

Institute of Animal Genetics,
Edinburgh, Sept. 5th.

Alkali Reserve in Asthma

SIR,—In his article in the *Journal* of August 18th (p. 299) Dr. Moll inclines to the opinion that in asthma there is a tendency to alkalosis. In support he repeats the well-known arguments about the rarity of asthma in certain diseased states known to be accompanied by acidosis. These are indirect and not convincing. More direct are McDowall's experiments on animals, in which bronchospasm was produced by alkalis, and Tiefensee's similar experiments. Tiefensee also claims, in support of an alkalosis, clinical proof based on biochemical findings. So far as I know these have not been confirmed.

Since the publication of his paper I have tried to find evidence of alkalosis mainly by the van Slyke method of determining the CO_2 combining power of blood plasma.

If this method, as carried out for me on seventy-two patients by Miss Jean Small, B.Sc., at Stobhill Hospital, is to be relied on, then the indication is quite frankly for an acidotic tendency. *There never has been the slightest evidence of alkalosis.* The normal range of figures for adults is given by Hawk as 53 to 80. Forty-nine patients gave a reading under 53—that is, nearly 70 per cent. gave a distinct indication of acidotic *tendency*. The readings may be summarized thus:

Under 45	50	55	60	60 or over
8	13	40	10	4

Not only do these values speak for themselves but usually the more prolonged and severe the asthma the lower was the figure: as the asthmatic improves his alkali reserve rises and his eosinophilia usually falls. The four values of 60 and over were 61, 61.3, 60, 61, and their respective eosinophilia percentages were only 5, 4, 2, and 8: in all the asthma was slight and at infrequent intervals (weeks). On the other hand, a man with severe asthma and a 12 per cent. eosinophilia had the low reading of 40 for his alkali reserve, and died in status asthmaticus.

Further evidence in favour of acidosis is (1) the increase of ammonia-combined acid in the urine; as recorded by Oriel and myself, and (2) the effectual treatment of her asthmatic patients by Dr. Flora Innes of Vellore, India, who gives drachm doses of sodium bicarbonate in large draughts of water with fruit juice every two or three hours; the dyspnoea quickly disappears, as also, she claims, does the achlorhydria, which is such a frequent feature in chronic asthmatics. Oriel also recommends sp. ammon. aromat., a volatile alkali. Benefit from HCl is likely to be due not to meeting an alkalosis but to meeting the gastric subacidity. My findings in this respect agree with Bray's—48 per cent. hypochlorhydria, and 26 per cent. achlorhydria, a total of 74 per cent. with gastric subacidity.

It will be interesting to know the findings of other observers as regards the alkali reserve; and, if these confirm mine, to learn how those who champion alkalosis explain the low figures for severe asthma and *the rise of the alkali reserve with clinical improvement*.—I am, etc.,

Glasgow, Aug. 31st. JAMES ADAM.

Is High Blood Pressure a Risk?

SIR,—In your issue of September 8th Dr. Thomas Robertson states that "anyone who has followed the trend of medicine for the last twenty years knows that . . . insurance companies are asinine." The ground for this statement, so far as I can gather, appears to be that they are chary of accepting, at ordinary rates, proposers with high blood pressure, in spite of the fact that some such cases live to a good old age.

Dr. Robertson agrees that "statistical investigations doubtless prove high blood pressures to be dangerous, but when it comes to a given patient there is no criterion whereby to judge the prognosis." If this is correct, surely the companies are justified in their attitude? Suppose they were offered a group of men aged 50, each with a systolic pressure of 200, but otherwise apparently healthy. They have every reason to suppose that the mortality experience in this group would be greatly in excess of the normal. Should they accept them at ordinary rates because some of them are likely to live long? Take a comparable example. If there were another great war, and 1,000 young soldiers wished to insure at ordinary peace rates, should they be accepted because some of them were almost certain to survive its dangers?

Until Dr. Robertson, from his observations on the trend of modern medicine, can teach the companies to differentiate the good from the bad in a group of hyperpietics, they are likely to continue the "asinine" practice he seems to deplore.—I am, etc.,

London, E.C.1, Sept. 8th. OTTO MAY.

SIR,—An *Epitome* paragraph entitled "The Prognosis for High Blood Pressure," which appeared in the *British Medical Journal* of February 6th, 1926 (para. 142), may interest your correspondent of August 25th, and seems worth quoting. It runs as follows:

"R. Shiström (*Ugeskrift for Laeger*, November 19th, 1925, p. 1038), as the result of a study of over 300 cases of high blood pressure, finds that the average age at which this condition begins to make itself felt by the patient is 52 years, but that before this age the high blood pressure has existed for about ten years unobserved by the patient. The average age at death of this class of patient is about 62 years; thus from the beginning to the end of this condition there is apparently about two decades of life. Life may, however, last as long as twenty-five to forty years, and in twenty of the author's cases in which he kept in touch with the patient for ten to sixteen years the blood pressure was seldom or never below 200 mm. of mercury, although most of the patients were well and fit for work during the greater part of this time. The author insists that the patient whose high blood pressure begins at the age of 50 and lasts for twenty years or more can hardly complain that this condition has shortened his life, seeing that at the age of 70 he has already exceeded the average expectation of life. Factors affecting the prognosis unfavourably are an early onset of the high blood pressure, the coexistence of syphilis, and disease of the kidneys. In most cases it is impossible to decide whether the disease is progressive or not, and the physician is therefore not justified in giving a grave prognosis.

—I am, etc.,

London, S.W.11, Sept. 7th. M.B., Ch.B.Ed.

Is the Taking of Blood Pressure a Risk?

SIR,—With reference to the letter by "M.S., F.R.C.S." in the *Journal* of August 25th, the answer, as I shall show, is in the affirmative when the blood pressure is being taken in elderly persons with signs of cardiac weakness. Here are two cases which occurred in my practice two years ago.

The first was a patient aged 74. He was a retired tradesman who had led a decent life except that he had for a time drunk too much whisky. He had gradually been getting weaker. He had no definite disease, although his heart showed signs of degenerative changes. I got one of our leading consultants to see him. After a careful and exhaustive examination he proceeded to take his blood pressure. We had only left the bedside one or two minutes when we were urgently recalled. We found the patient quite unconscious, his face blue, and after one or two gasps he was dead.

The second case was more appalling. He was an artist about the same age, who had led a perfectly good life. His condition was similar to the first case. I got the same consultant to see him. When we entered the bedroom he was sitting up in bed, and on seeing us he smiled and remarked, "I do feel a fraud, two doctors coming to see me and I feeling so well." These were his last words. While the consultant was taking his blood pressure I chanced to look at the patient. On calling the consultant's attention to the patient's discoloured face he released the instrument, but it was too late—he was dead.

In the first case the blood pressure reading was: systolic, 170 mm. Hg; diastolic, 105 mm. Hg. In the second case, systolic, 140; diastolic, 120.

In both these cases death was certified as due to coronary thrombosis. As far as I know this danger has not been pointed out before.—I am, etc.,

West Bridgford, Nottingham, Sept. 3rd. W. HUNTER, M.D.

1. It has been positive in all cases which showed clinical activity. Here *x*-ray treatment has improved the blood picture, but not made it fully normal.

2. The test has also been positive in some post-operative cases which showed no clinical evidence of disease. In some of these cases a satisfactory blood picture has been restored by *x* rays; in others there has been improvement only. So far none in this group has developed macroscopic metastases.

3. The favourable response is due to some generalized action, and is brought about by small repeated doses over a wide field. It is extremely easy in susceptible patients to make the blood picture worse, though if this is detected in time no harm is done, as it improves on cessation of the treatment. The lesson taught is that *x*-ray dosage for constitutional purposes requires individual control.

In breast cancer the control of metastases is the ultimate problem. If the vanadic acid test really gives us an indication of metastatic activity in its microscopic stages, there is a chance of doing something in time. We do not yet know if obvious secondaries can at times develop in the face of a normal blood picture, nor do we know for how long we can maintain a normal blood picture in cases where *x*-ray treatment has brought it back from an abnormal state. But it would seem just as rational to make repeated blood tests in the case of carcinoma mammae, and act accordingly, as it is to do Wassermann tests in the case of a patient who has been "cured" of syphilis. The vanadic acid test may help to abate the controversy between those who say "let well alone" and those who retort that one can never be sure that all is well. Unless and until the test can be proved valueless as an indication of latent secondary mischief, he would be a bold man who would refuse to take some action in the case of a patient apparently in good health but showing an unfavourable blood picture.

In conclusion, I should like to point out that the above remarks have no bearing upon the question of localized dosage in other forms of cancer, or even upon the dosage requisite for the primary growth in cancer of the breast itself when that is dealt with by radiation.—I am, etc.,

London, W.1, Aug. 26th. F. HERNAMAN-JOHNSON.

The Swab in Diphtheria Diagnosis

SIR,—Your kind reference to my method in last week's *Journal* (p. 476) has suggested to me that it might be advantageous if I were to offer to supply to bacteriologists who have not used it some of the stain, together with notes on its application. I write to say, therefore, that I shall be delighted to do so to anyone who cares to write to me direct. I believe samples of toluidin-blue vary in their suitability for this method of staining, and it is therefore important to have a reliable brand. Your article brought out one important point which I had omitted from my letter—namely, its value for immediate diagnosis of Vincent's angina.—I am, etc.,

CONSTANT PONDER.

Sessions House, Maidstone, Sept. 10th.

SIR,—It appears that my letter on this subject has been misunderstood to some extent. I did not wish to convey the idea that the taking of swabs should be abolished; my intention was to infer that, while a swab should be taken, the greatest care should be exercised in the event of a negative report before the case is definitely classified as not being diphtheria, and that in making a diagnosis the bacteriologist's report must be considered in conjunction with the clinical aspects of the case.—I am, etc.,

Bridport, Sept. 8th. J. C. T. SANCTUARY.

Obituary

CARL OLAF JENSEN, M.D.

Director of the Serological Laboratory, Danish Veterinary and Agricultural College

The announcement of the sudden death of Professor C. Olaf Jensen in Copenhagen on September 3rd must have awakened feelings of intense regret in the minds of thousands, and especially among medical men and veterinary surgeons.

Professor Jensen achieved world-wide fame by his researches regarding the experimental transmission of cancer, but these occupied only a small part of his active life, which was mainly devoted to the study of the contagious diseases of the domesticated animals. In a lecture delivered in Copenhagen in 1901, and more fully in a paper published in 1903, he showed that a malignant tumour occurring in mice could be readily transmitted to healthy animals of the same species by inserting a small particle of the tumour under the skin—a process he named "transplantation" to distinguish it from inoculation. The tumour in question was a carcinoma or adenocarcinoma, and the new growths which developed from the transplanted particle were found to be of the same nature as the naturally occurring tumours in mice. It was furthermore proved that by this process of transplanting or grafting the tumour could be transmitted in series through many generations, if not indefinitely. The cells of the experimentally produced tumours showed the capacity for uncontrolled multiplication which is now recognized to be the property that distinguishes the cells of malignant new growths from those of the normal body.

Jensen's success, where others had failed, was due to the fact (1) that the attempts to transmit the tumours were made with animals of the same species, and (2) that the method of transmission adopted was that of transplanting or grafting of the living tumour cells. It would scarcely be possible to exaggerate the practical importance of Jensen's great discovery. Its value lay not in what the experiments proved in regard to malignant tumours in mice, but in the fact that it pointed the new way in which researches regarding malignant tumours in animals might profitably be pursued. In fact, a large part of the new knowledge regarding malignant neoplasms since 1901 has been obtained by investigations on the lines suggested by the pioneer work of Jensen. It was he who discovered that the cancer cells of the mouse tumours possessed a remarkable viability compared with the ordinary cells of the body, and remained alive at ordinary temperatures for many days after removal of the tumour. This made it possible to transmit what may be called the seeds of Jensen's mouse tumours from Copenhagen to laboratories in other parts of the world, including those of the Imperial Cancer Research Fund in London. In this way there began a period of intense experimental study of cancer problems in which the method initiated by Jensen played a prominent part.

His other contributions to animal pathology included valuable papers on braxy (1896), diarrhoea in young calves (1891, 1892, and 1911), necrobacillosis (1897), and contagious bovine abortion (1933). All of these papers embodied results of the author's original investigations, and he was the first to prepare specific antisera for use against the first two diseases. The paper on contagious abortion was his latest contribution to veterinary literature; in it he reported the results of experiments in the use of vaccines for the prevention of contagious abortion, and drew conclusions very adverse to the method that has been extensively practised in this and other countries.

THE LATE DR. R. A. GIBBONS

The obituary notice published last week (p. 493) should have mentioned Dr. R. A. Gibbons's long and valued association with the Medical Insurance Agency. He was elected to the Committee of Management on November 21st, 1918, and thenceforward continued to attend its meetings with great regularity. A few further biographical details of Dr. Gibbons's career have been sent to us by a member of the family. His father was Commissary General David Gibbons in the English Army, and his mother was Elizabeth Frances, daughter of Captain James Ireland-Wilkinson, R.N. It was merely owing to the accident of his father being stationed in Canada for a few years, in a military capacity, that he was born there; he was brought to England while a baby in arms. His parentage was of Scottish origin, and he was brought up in Edinburgh.

On August 12th, at his home at Snainton, Yorks, the death took place of Dr. GEORGE HARDWICKE, aged 58 years, after a long and tedious illness. Dr. Hardwicke completed his medical education at the General Infirmary at Leeds, taking the diplomas of M.R.C.S. and L.R.C.P. in 1897. During the same year he won the prizes in medicine, surgery, and midwifery. After qualification he held the following appointments: house-physician, General Infirmary at Leeds; resident surgical officer, Ida Convalescent Home; senior house-physician, Leeds Public Dispensary; and assistant resident medical officer, Leeds City Fever Hospitals. In 1917 he received a commission in the R.A.M.C. and held the rank of captain, served with the 83rd Field Ambulance, 21st Division, Salonika, and was mentioned in Sir G. F. Milne's dispatches. While on active service he contracted the illness from which he eventually died. Dr. Hardwicke went to Snainton thirty years ago, and during that time played a prominent part in the life of the countryside. He was keenly interested in sport, and was a recognized authority on the Yorkshire dialect, and had addressed the Society of Yorkshiremen in London and Lincoln on this subject, in addition to writing several short stories and sketches in dialect. Several years before the outbreak of war he became interested in Red Cross work, for which cause he did a great deal, and before joining the Army had charge of Wydale Auxiliary Hospital and Wykeham Red Cross Hospital. He had been a member of the Scarborough Division of the British Medical Association since 1899. During his life in Snainton he greatly endeared himself to all who came in contact with him. His understanding and ready sympathy with those in trouble will ever be remembered, and the loss is a great one to the whole countryside.

The Services

D.G.M.S. AUSTRALIAN MILITARY FORCES

The appointment is announced of Colonel Rupert Major Downes, C.M.G., V.D., as Director-General of Medical Services to the Military Forces of the Commonwealth, of Australia, in succession to Major-General George W. Barber, C.B., C.M.G., D.S.O., who retires in November, 1934, on reaching the age limit.

General Barber was born in Prestwich, Lancashire, and began life as a sailor, but later had to abandon the sea owing to defective eyesight. He studied medicine in London at the Middlesex Hospital, and obtained the M.R.C.S., L.R.C.P. diplomas in 1891. He then joined the P. & O. Line as a ship surgeon and spent some years at sea. In 1895 he settled in the goldfields at Kalgoorlie, Western Australia, where for many years he was Government Medical Officer. In 1911 he commenced private practice in Perth, where, as at Kalgoorlie, he achieved a wide reputation as a general practitioner and surgeon. The third phase of his career began in 1900 when he joined the Australian Army Medical Corps. On the outbreak of war in 1914 he was mobilized as senior medical officer of the Fremantle Garrison. He left Australia in December, 1914, with the Second Australian General Hospital, and served in Egypt, Lemnos, and Gallipoli with the rank of major. After the evacuation of Anzac he was A.D.M.S. of the 4th Australian Division, with the rank of colonel, and served in France till the end of the war. In April, 1918, he was appointed D.D.M.S. of the Australian Corps, and gave signal service in this capacity. On returning to Australia he was appointed D.D.M.S. of Western Australia, and in 1925 he succeeded Sir Neville Howse as Director-General of the Medical Services for the Commonwealth. General Barber was awarded the Orders of the C.B., C.M.G., and D.S.O., the French Croix de Guerre, and was mentioned in dispatches eight times.

Colonel Rupert Downes also had a career unusual for a medical man. His father, Major-General M. F. Downes, C.M.G., served in the Royal Artillery in the Crimean War, and after acting as Commandant of South Australia became Secretary of Defence for Victoria and then Commandant of Victoria during the period of the South African War. Colonel Rupert Downes was born in Adelaide in 1885, and was educated at Haileybury College, Melbourne. As a resident in Ormond College he graduated M.B., B.S.Melb. in 1907. He obtained his University blues for cricket and tennis. After graduation he became surgical tutor at Ormond College, and proceeded M.D., M.S. Practising in Melbourne as a consulting surgeon, he held several surgical hospital appointments, and at the time of his appointment as D.G.M.S. he was in-patient surgeon at the Children's Hospital, Melbourne, and consulting surgeon to the Eye and Ear Hospital. Among his other appointments are those of Commissioner of the St. John Ambulance Brigade and president of that association, chairman of the Board of the Victorian Branch of the Australian Massage Association, member of the Council and vice-president of the British Medical Association (Victorian Branch), and lecturer in medical ethics. His military record dates from 1900, when, as a boy trumpeter, he enlisted in "B" Battery, Victorian Field Artillery, with which he served for eight years. In 1908 he obtained his first commission in the Australian Army Medical Corps, and was an enthusiastic medical officer during the pre-war years. Shortly after the outbreak of war he volunteered for active service, and his first command was the 3rd Light Horse Field Ambulance in 1914–15 in Egypt and Gallipoli. Before the evacuation he was appointed A.D.M.S. of the New Zealand and Australian Division at Anzac. After the evacuation he was appointed A.D.M.S. of the Anzac Mounted Division in Egypt and Palestine, and later held the appointment of D.D.M.S. of the Desert Mounted Corps in Sinai, Palestine, and Egypt. He was thus responsible for the medical services of the greatest mounted force ever assembled in modern times. Towards the end of the war he was D.D.M.S. of the A.I.F. in Egypt. He was awarded the C.M.G. and mentioned in dispatches four times. In the Commonwealth Military Forces since the war he held the appointment of D.D.M.S., Third Military District (Victoria), from 1921 to 1934. He was a member of the Committee on Reorganization of the Medical Service in 1920 and the representative of the medical profession on the Commonwealth War Book Committee. He has also held the appointment of honorary surgeon to the Governor-General.

It must be understood that in Australia, in contradistinction to the practice in Britain, there is only one medical officer in the permanent military forces in the person of the D.G.M.S. The remaining appointments are filled by citizen soldiers. This service makes a considerable demand on the time and energies of men in active medical practice, with the result that a great proportion of the administrative work is done by officers and warrant officers of the permanent forces without medical training.

43RD FIELD AMBULANCE DINNER

The committee responsible for organizing a reunion of members of the 43rd Field Ambulance, R.A.M.C., has decided to hold a dinner at the Grosvenor Hotel, Deansgate, Manchester, on Saturday, October 27th, at 6 p.m. Price of ticket, 5s. 9d.; evening dress optional. To enable the committee to assess the number who will be present, applications for tickets, with remittance, should be made before October 15th to Mr. W. C. Dickson, 76, Boswall Drive, Edinburgh.

DEATHS IN THE SERVICES

Brevet Colonel Charles Bunbury Lawson, late R.A.M.C., died in London on July 30th, aged 66. He was born at Ballingarry, Ireland, on August 3rd, 1867, and was educated at Edinburgh, where he graduated M.B., C.M. in 1889. Entering the Army as surgeon lieutenant on January 30th, 1892, he became lieutenant-colonel on August 3rd, 1914, got a brevet as colonel on February 18th, 1915, and retired on April 10th, 1920. During his career he specialized as a radiologist. He was medical officer to H.R.H. the Duke of Connaught while commander-in-chief in the Mediterranean; pathologist and radiologist to the Royal Herbert Hospital, Woolwich, in 1903; examiner in surgery, pathology, and radiology to the Royal Army Medical College at Netley in 1903; and pathologist, radiologist, and surgical specialist at Malta from 1903 to 1908. He held the same offices at the Royal Victoria Hospital, Netley, 1908 to 1912; and also, after the war, at Colchester in 1918–20; and was radiologist and medical assessor to the Ministry of Pensions in 1923–5. He served in the South African War in 1899–1900, when he took part in the advance on Kimberley, and received the Queen's medal, with a clasp; and in the war of 1914–18, when he was mentioned in dispatches in the *London Gazette* of February 17th, 1915. He was for forty-one years a member of the British Medical Association.

Medical News

Dr. Henry MacCormac will deliver the introductory address, entitled "Our Profession," at the opening of the winter session of the Middlesex Hospital Medical School, at the Queen's Hall, Langham Place, on Monday, October 1st, at 3 p.m., after which Sir E. Farquhar-Buzzard, Bt., will distribute the prizes. The annual dinner takes place the same day at 7.30 o'clock at the Savoy Hotel.

The Westminster Hospital Medical School annual dinner will be held at the Trocadero Restaurant on Saturday, September 29th. A special post-graduate course for old students has been arranged for Saturday, September 29th, and Sunday, September 30th. The inaugural address will be given by Sir John Simon in the Central Hall on Monday, October 1st, at 3.30 p.m.

The annual dinner of past and present students of King's College Hospital Medical School will be held on Saturday, September 29th, at 8 p.m., at the Connaught Rooms, with Dr. Wilfrid Attenborough in the chair. An intensive post-graduate course will be held on Saturday, September 29th, 12 to 6 p.m., and on Sunday morning, September 30th, to which members of the school and other practitioners are invited. A series of post-graduate lectures, free to all practitioners, will be delivered in the lecture theatre on Thursdays, at 9 p.m., from October 11th, 1934, to April 4th, 1935. The opening lecture will be given by Mr. Cecil Wakeley. Subsequent lectures will be announced weekly in our medical diary.

The thirteenth reunion dinner of the British Serbian Units Branch of the British Legion will be held on Thursday, September 27th, at the Lysbeth Hall, Soho Square, London, at 7.30 p.m. Lieut.-Colonel A. E. Kidd will preside, and a large party of ex-servicemen from Yugoslavia are expected to be present. Tickets may be obtained from Miss Marx (24, Melcombe Court, Dorset Square, N.W.1). All friends of Serbia are welcome.

The next extra-metropolitan dinner of the University of London Medical Graduates' Society will be held on Friday, September 28th, at 7.30 p.m., in Queen's College, Cambridge. Members should apply for tickets, enclosing the sum of 8s. 6d., to the honorary secretaries not later than September 24th, at 11, Chandos Street, Cavendish Square, W.

The annual address at the Central London Throat, Nose, and Ear Hospital (Gray's Inn Road, W.C.) will be given by Mr. Douglas Harmer on Friday, October 12th, at 4 p.m. His subject is "Treatment of Malignant Disease in the Upper Jaw."

The fifteenth Norman Kerr Memorial Lecture will be delivered before the Society for the Study of Inebriety by Sir Malcolm Delevingne, lately British Representative on the Opium Advisory Committee of the League of Nations, on Tuesday, October 2nd, at 4 p.m., in Friends House, Euston Road, N.W. His subject is "Some International Aspects of the Problem of Drug Addiction." Each member and associate is at liberty to introduce visitors.

The London County Council announces that a three-months' course of lectures and demonstrations in connexion with instruction in hospital administration for the D.P.H. will be given at the North-Western Hospital, N.W.3, and at the Brook Hospital, S.E.18, from October 1st, on Mondays and Wednesdays at 9.30 a.m., and alternate Saturdays at a time to be arranged. These courses comply with the requirements of the revised regulations of the General Medical Council, which came into operation in 1931, and the fee for each is £3 13s. 6d. A course may, however, be taken under the previous regulations at a fee of £4 4s. Medical men desiring to take either course must pay beforehand the requisite fee to the Medical Officer of Health, London County Council, Public Health Department (Special Hospitals), County Hall, S.E.1, giving full name and address.

The following international medical post-graduate courses have been arranged for October by the Berlin Academy for Medical Post-Graduate Training, under the auspices of the Lord Mayor of Berlin, and in succession to the Society of Lecturers for Medical Post-Graduate Training in Berlin: Internal medicine, with special regard to tuberculosis, from the 1st to 13th—fee, RM. 60; course in tuberculosis in the tuberculosis hospital of Berlin, Waldhaus Charlottenburg, in Sommerfeld, from the 15th to 20th—fee, RM. 50 (accommodation and board can be obtained for RM. 2.7 per day); obstetric-gynaecological post-graduate training week, from the 15th to 20th—fee, RM. 50; course in diseases of the ear, nose, and throat, from the 1st to 13th—fee, RM. 120; course in paediatrics, from the 22nd to 27th—fee, RM.50; surgical intrathoracic diseases, with special regard to pulmonary tuberculosis, from October 29th to November 2nd—fee, RM. 80. Individual courses in all branches of medicine with bedside and laboratory practice are held every month. The fee is RM. 50 to RM. 80 for eight lessons of two hours each, special attention being paid to practical work. Programmes and further particulars are obtainable from the Academy, Berlin, N.W.7, Robert-Koch-Platz 7 (Kaiserin Friedrich-Haus). German as well as foreign doctors can attend the courses, and foreign students obtain a reduction of 60 per cent. in fares from the German railways.

The Fellowship of Medicine and Post-Graduate Medical Association announces that lecture-demonstrations will be given at 11, Chandos Street, Cavendish Square, at 2.30 p.m. on Tuesdays as follows: "Hemiplegia" on September 18th and "Paraplegia" on September 25th. Forthcoming courses include chest diseases at the Brompton Hospital, September 24th to 29th; proctology at the Gordon Hospital during the same period; disease of children at the Queen's Hospital, October 1st to 13th; dermatology at St. John's Hospital from October 1st to 27th; and an evening series of lectures on physical medicine at the St. John Clinic and Institute of Physical Medicine during the same period. A course in medicine and surgery will be held at the Metropolitan Hospital from October 8th to 20th, and a week-end course in diseases of the heart and lungs at the Royal Chest Hospital on October 13th and 14th.

Post-graduate lectures and demonstrations will be given by members of the honorary staff of the Manchester Royal Infirmary on medical, surgical, and special subjects each week on Tuesdays and Fridays, from September 25th to December 18th. All lectures begin at 4.15 p.m. and are free. Details may be obtained from the secretary for the post-graduate lectures.

The thirty-fourth congress of the French Association of Urology will be held at the Paris Faculty of Medicine on October 8th under the presidency of Dr. Heitz-Boyer, when the subject for discussion will be orchi-epididymitis apart from syphilis and tuberculosis, introduced by Dr. Chauvin of Marseilles. Further information can be obtained from Dr. O. Pasteau, 13, Avenue de Villars, Paris, 7e.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

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QUERIES AND ANSWERS

Cholecystectomy and Recurrent Duodenal Ulceration

Dr. G. BREBNER SCOTT (London, S.W.16) writes: I have lately been a victim of the latest fashionable complaint—namely, cholecystitis with gall-stones. This necessitated the removal of my gall-bladder. Picturing in my mind the fact that now, instead of intermittent gushes of bile, I have a persistent seepage of bile bathing my duodenum, leads me to the rather alarming suggestion that cholecystectomy of a normal gall-bladder might be the best treatment for recurrent duodenal ulceration with its attendant and dangerous haemorrhages. May I ask your readers: (1) Do you know of any cases of duodenal ulceration following a cholecystectomy? If so, this would be fatal to my suggestion? (2) Do you know of any cases of duodenal ulceration associated with cholecystitis and cured after cholecystectomy had been performed? If so, may not my suggestion of cholecystectomy as a cure for recurrent duodenal ulcer be a feasible one?

After-effects of Continued Doses of Adrenaline

"L. H." asks: Can any of your readers who have observed the results of repeated injections of therapeutic doses of adrenaline over long periods, in cases of asthma and other conditions, state whether any permanent effects on the health—for example, due to rise of blood pressure or any other condition—are produced? It is known that rabbits are liable to develop degenerative changes in the aorta as the result of repeated intravenous injections of adrenaline, but these animals are also prone to arterial changes from many other experimental procedures.

"Nail-biting"

Dr. RICHARD EAGER (The Mental Hospital, Exminster) writes: With due respect to the psychological aspect of this vice and the old idea that it was an indication of "bad temper," I must heartily support the advice given by Major H. Williamson of Dorchester (*Journal*, August 18th) as to the suggested treatment of this condition. I have for long been convinced that the intolerable irritation caused by too long nails, split nails, or "hang-nails" starts the habit of biting or tearing as the only form of relief in certain children. A pair of pocket scissors or even a file (but preferably both) which can be carried about easily will, I am sure, do much to stop the formation of this habit if appropriate instructions be given to children in whom nail-biting has commenced. It is at all events more rational than the old-fashioned application of bitter aloes and the threats of punishment previously used.

LETTERS, NOTES, ETC.

Transport of Invalids by Air

Dr. A. LANDALE CLARK (London, W.1) writes: I was recently faced with the problem of transporting a patient, aged 20 years, from London to Zurich. The patient was in a very weak condition, having had one thigh amputated for extensive osteomyelitis. It was decided that the only way in which the journey could be accomplished was by air. In co-operation with the parents I approached Imperial Airways regarding the journey. It was finally decided to reserve the forward cabin in one of their newest type of four-engined aircraft. This cabin ordinarily accommodates ten passengers. By removing the backs of four seats it was possible to erect a wooden bed, complete with special mattress. The bed was six feet long and about three feet wide, and was fitted in such a position that the patient, in a reclining attitude, had a perfect view through the windows. In addition to the patient, there were in the cabin his mother, a male nurse, and myself, and we could with comfort have had two other passengers as well. The journey started at 7 a.m., from a nursing home in the West End of London, by motor ambulance to Croydon, where the patient was lifted direct from the ambulance bed to that in the aeroplane, it being perfectly easy to run the ambulance alongside. The actual air journey started at 8.5 a.m. and we reached Zurich at 2.15 p.m., having had half an hour's stop at Paris and a quarter of an hour at Basle. The weather was, on the whole, good. At Zurich an ambulance was waiting, and again it was possible to bring it alongside the aeroplane. The patient was in bed in the clinic there at 3.15 p.m. precisely. The whole journey did not cause any unpleasant symptoms whatsoever, the only drug administered during the whole period of transit being 1/4 grain of morphine, given half an hour before arrival at Zurich. The patient ate quite a good lunch on board, and his temperature that evening was only one degree higher than on several previous evenings in London. The next day the temperature was practically normal, and there were neither signs nor symptoms to show that he had been subjected to any undue strain or fatigue. The total expense of the journey was, I understand, between £70 and £80. Its ease and comfort were mainly due to the interest and trouble taken by members of the staff of Imperial Airways, in particular the Special Charter Department. I was shown a smaller machine, fitted nevertheless with three engines, which contained a full-length bed, besides accommodation for two other people; it can be hired as an aerial ambulance at the rate of 1s. 6d. a mile. I hope that this letter may be of service to some of my colleagues who may be faced with a similar problem.

Transport of Invalids by Railway

Dr. W. THOMSON WESTWOOD (Stretford, Manchester) writes: Dr. Maurice Campbell's experience (September 8th, p. 498) has been more fortunate than mine. I had recently occasion to have a patient moved from Manchester to Glasgow, where she was to undergo an operation immediately on arrival on account of acute cholecystitis. In spite of making every inquiry the railway company were only able to suggest taking two first-class tickets so that the invalid could ensure having one side of the compartment to herself, and as the train was expected to be busy they were unable to reserve a compartment. I should be glad to learn for future reference how these invalid coaches Dr. Campbell mentions are obtained.

Rectal Prolapse Complicated by Procidentia

Dr. D. J. CANNON (Kildare) wishes to correct a sentence in his letter under this title which appeared last week (p. 488). In paragraph 5 the fourth sentence should run: "In the female, then, if the lateral supports of the rectum are loose, complete prolapse of that organ will not occur provided the anal sphincter is intact. A high rectocele may occur instead."

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 38, 39, 40, 41, 42, 43, 46, and 47 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 44 and 45.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *168*.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

173 Radioscopic Examination of Recruits

S. P. BOTENGA (*Nederl. Tijdschr. v. Geneesk.*, June 2nd, 1934, p. 2463) states that fluoroscopic examination of 1,101 recruits yielded the following results. In six cases where no physical signs were found in the lung radioscopy was the only means by which tuberculous lesions, both incipient and advanced, were detected. In nine cases the pulmonary changes were also obvious on percussion and auscultation. In forty-four cases the radioscopic picture gave a clearer view of doubtful findings, and in eight cases radioscopy alone showed the presence of tuberculous lesions both active and inactive in persons who had been declared unfit for other reasons. In twenty-nine cases the radioscopic picture indicated that the recruit should be kept under observation and be regarded as conditionally fit for service.

174 The Family History in Pulmonary Tuberculosis

K. SCHBERTH (*Wien. klin. Woch.*, May 25th, 1934, p. 643) asserts on an examination of 600 cases that a person exposed to tuberculosis usually becomes infected only if his family history is tainted with the disease. At a low estimate, 64 per cent. of patients with pulmonary tuberculosis have tuberculous relatives. The tuberculous taint may be transmitted by "conductors"—thus in a case of healthy persons begetting tuberculous children, the taint may have been conducted on the mother's side through a tuberculous grandmother. Schberth says, "An aunt who years ago had apical tuberculosis is more important in the pathogenesis of tuberculosis than a bed companion with active disease." He states that no tuberculous patients and no persons with a tuberculous family history should be allowed to beget children, and that if in such marriages women become pregnant, therapeutic abortion should be carried out. When both parents are tuberculous, most of the children will develop the disease, and there is no rule indicating which of them are likely to fall a prey to the disease. Adults with untainted family histories who are exposed to tubercle—for example, a healthy woman marrying a tuberculous man, doctors and nurses in sanatoria—rarely become infected, and if they do the infection is usually slight. The author advises that partners contemplating matrimony should make sure that the grandparents and their offspring on both sides are healthy. It is difficult to get facts further back than the third generation, and the chances of taint are remote. Every member of the two generations is of equal importance, for the taint is not necessarily transmitted directly, but may be transmitted, for example, via an uncle. In those cases of tuberculosis in which there is no family taint it may be assumed that the disease is due to a massive infection which has occurred in youth.

175 Duration of Immunity following Vaccination

W. P. DEARING and H. S. DAVIDSON (*Journ. Amer. Med. Assoc.*, June 16th, 1934, p. 1998) studied the duration of immunity to small-pox as indicated by the results of vaccination in 557 medical students who had previously been vaccinated and in nine who had never been vaccinated but who had had small-pox. Of 337 students vaccinated ten years or less after previous vaccination only one gave a primary take, fifteen (4.6 per cent.) accelerated takes, and 321 (95 per cent.) an immediate reaction. Of the 168 students vaccinated from ten to nineteen years previously only six (4 per cent.) gave primary takes, fifty (29 per cent.) accelerated takes, and 112 (67 per cent.) immediate reactions. After twenty years thirty-five of fifty-two reactions (67 per cent.) were immediate, thirteen (25 per cent.) were accelerated, and 8 per cent. gave primary takes. Thus immunity conferred by a single vaccination usually lasts longer than six to ten years. Vaccination of the nine students with a history of small-pox gave four primary takes, four accelerated takes, and only one immediate reaction. Small-pox therefore does not protect so well against cow-pox as vaccination.

176 Goitre in Otago

F. FITCHETT, C. E. HERCUS, and F. G. BELL (*Aust. and New Zeal. Journ. Surg.*, April, 1934, p. 318) record a six-year study of thyroid disease in Dunedin Hospital, comprising 368 cases. Simple and toxic goitre occurred in approximately equal proportion, but many of the simple cases presented features of "borderline" toxicity. A high familial incidence was found. The authors condemn the arbitrary division of thyroid disease into primary and secondary, urging that the pathological changes which induce toxicity are the same whether they occur in a previously healthy or in an already diseased gland. They suggest four groups, namely: (1) simple goitre of the colloid or nodular type; (2) the thyrotoxic class, including primary and secondary Graves's disease; (3) hypothyroid states of myxoedema and cretinism; and (4) malignant thyroid diseases. The authors' investigations showed that the results of surgical treatment in toxic goitre were excellent, comparing favourably with those in other important disease groups, such as the biliary one. The operative mortality in these toxic cases was 3.7 per cent. An unduly high incidence of recurrent laryngeal nerve lesions came to light. The classical form of post-operative myxoedema was noted in three out of 319 operations in all classes, and tetany occurred in three cases in the same series. Biochemical findings indicated that the blood iodine content was higher in primary Graves's disease than in simple goitre, and that the iodine contents of blood, urine, faeces, and gland were all lower than normal in simple goitres. The authors conclude that the histological picture merely represents innumerable variations of one and the same pathological process of involution and hyperplasia, and that it is impossible to correlate this picture accurately with the clinical classification.

Surgery

177 Tonsillectomy

E. WIRTH (*Med. Klinik*, June 1st, 1934, p. 725) enumerates the indications of tonsillectomy as follows: (1) recurrent tonsillitis, (2) peritonsillar abscess, (3) chronic inflammation of the tonsils, (4) disease in other organs believed to be due to tonsillar infection, and (5) acute tonsillitis and peritonsillitis with complications. Tonsils with simple hypertrophy unrelated to chronic inflammation or mechanical disturbances of speech or respiration should be left alone. Acute tonsillitis is no longer a contraindication to tonsillectomy, but on the whole it is better to wait for eight to fourteen days after the acute inflammation has subsided. The same holds good for peritonsillar abscess, especially when simple incision fails to empty it fully. In patients with haemophilia, diabetes, tuberculosis, nephritis with high blood pressure, and in those with rigid blood vessel walls, tonsillectomy should not be advised. The operation should be performed under local anaesthesia, which is usually complete and lasts for twenty to thirty minutes. The anterior pillar of the fauces should be removed if there is difficulty in shelling out the capsule. Ambulant post-operative treatment is not recommended, and patients should be kept in hospital for five days and off work for a fortnight. Wirth advises tonsillotomy under local anaesthesia and luminal in children under 12 with few exceptions. Infants should get a general anaesthetic. Post-operative haemorrhage may occur with the most perfect technique, but was

serious in only 0.2 per cent. of cases. Pain usually lasts for two to four days after operation. Respiratory complications are uncommon and usually not serious. Exogenous infection of the wound is more to be feared than autogenous, and slight rise in temperature is common; but marked sepsis is rare. The author denies the allegation that tonsillectomized patients are more prone to infections of all sorts, especially those of the upper respiratory tract. Rarely, patients complain that they are more liable to catch cold, or that there is some disturbance in speaking or singing, but failures may usually be explained on the grounds that ineradicable changes have occurred in the nasopharyngeal cavity due to previous chronic disease.

178 Recurrence of Bladder Papilloma

H. LORGE (*Zeit. f. Urol.*, 1934, v, 310) quotes the report of Scheele from the combined literature that after removal of vesical papilloma through a cystotomy wound recurrence occurs in over 60 per cent. of cases. He concludes that there is evidence of special danger after this operation of occurrence of: (1) diffuse papillomatosis, with very numerous histologically benignant growths appearing rapidly after a considerable period of freedom, (2) recurrences in the scar which show definite malignancy and often take the form of solid carcinoma, and (3) other carcinomatous recurrences. An analysis is given of forty-eight cases treated by Suter by electrocoagulation. There were sixteen cases of recurrence of the papilloma, but of these one-half at least were cured by repetition of the treatment, and only one was carcinomatous. Thirteen of the recurrences occurred less than three years after electrocoagulation treatment: as in the case of the primary papilloma preference was shown for the paratrigonal area. Lorge points out that although the vesical mucosa shows in many cases indubitable evidence of a "diathèse néoplastique," it is logical to assess the results of treatment according to the appearance of metastases and their response to treatment. No method of treatment excludes recurrence. Cystotomy is undesirable as favouring scar-implantation metastases. Snare operations are insufficiently radical and lead to truly local recurrence; after electrocoagulation recurrences, however, never affect the scar, and are relatively infrequent. Suter did cystotomy in six cases only, in which electrocoagulation was contra-indicated by haemorrhage preventing cystoscopic vision; recurrence occurred in five.

Therapeutics

179 Acetylcholine in Peripheral Vessel Occlusions

A. GOLDMAN and K. OSSERMAN (*Med. Record*, June 6th, 1934, p. 579) report three cases of peripheral vessel occlusions treated with acetylcholine. They quote the literature to the effect that the value of this drug lies in the absence of subjective discomforts and its relative safety in patients of any age, regardless of the general physical condition or associated debility. It is, however, not a dependable medicament; its effect is transient, and it must be injected intramuscularly. In one of the authors' cases the patient had probably a partial occlusion of the bifurcation of the internal iliac artery; it seemed that the injection of acetylcholine dilated the terminal vessels, and so improved the circulation and relieved the upper congested part. Its effect on the pain was very definite. The second patient had previously had a leg amputated for arteriosclerotic gangrene; three years later paralysis of the other leg occurred, with subsequent ulcer formation. The pain was much reduced by acetylcholine injections, but amputation was later necessary. The third patient had acrocyanosis of the glove and stocking type of both upper limbs, with hypertension, arteriosclerosis, auricular fibrillation with cardiac decompensation, inguinal hernia, and scrotal cellulitis. The employment of acetylcholine cleared up the acrocyanosis, while the exhibition of digitalis removed the oedema of the legs and the scrotal cellulitis. The authors add that the injection of this drug once a week, as usually recommended, is useless, the optimal dose being one ampoule twice a day. The drug's action and its excretion are rather rapid: it is considered worth trial in peripheral vascular disturbances, especially when these are complicated by debility.

180 Vaccination against Typhus

G. BLANC, M. NOURY, M. BALTAZARD, J. BRUNEAU, and J. BARNEOUD (*Bull. de l'Acad. de Méd.*, May 1st, 1934, p. 582) reported last year a series of successful vaccinations of the human subject against typhus fever. Their vaccine was derived from maceration of the tunicae vaginales and spleen of guinea-pigs infected by murine typhus, and conferred immunity against Toulon and Casablanca strains as well as against the historic virus. These workers have now satisfied themselves that no increase of virulence is shown by the murine Casablanca type (the source of the vaccine) after fourteen months' preservation and sixty successive passages through guinea-pigs. The scrotal-splenic extract is active in dilutions of 1 in 1,000, so that vaccine material for 1,000 persons can be got from one guinea-pig; but paper filtration reduces considerably its potency. The vaccine is a living virus; it is without danger, but confers its immunity at the expense of an infection which is ultra-benignant or imperceptible.

181 Pepsin Therapy in Gastro-duodenal Ulcers

In a previous report M. DEBRAY and A. ROY (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 11th, 1934, p. 816) showed the marked benefits resulting from pepsin therapy by intramuscular injections in gastro-duodenal ulcer, but that about 20 per cent. of the patients did not respond to this treatment. On the hypothesis that these failures were due to a sensibilization of the gastric mucosa to pepsin and that treatment should be applied more directly to this tissue, the authors have employed intramucous membrane injections in such cases. Owing to the inaccessibility of the gastric mucosa, these were made into the mucosa of the cheek. A solution of pepsin (0.05 gram per c.cm.) was used, the first dose being 1 in 10 c.cm., followed by doses of 2 in 10 and 3 in 10 c.cm. A series of twelve injections monthly (three per week) were given; the frequency and dosage of subsequent series were governed by the digestive tolerance of the patients and the radiological results. The injections, which must be made deeply into the mucosa, cause the formation of a small bulla. Most patients tolerate these injections perfectly; in some, a slight pain at the injection site and swelling of the cheek occur which, however, disappear in one or two days. Brief notes of eight illustrative cases are given; seven of these were markedly improved or apparently cured; no radiological evidence of ulcer was obtained in the non-responsive case. Debray and Roy state that the pain and vomiting disappear in the same time as after intramuscular injections. They consider that, owing to the minute doses injected, the effects cannot be attributed to the medicament, but that a veritable desensibilization of the gastric mucosa was produced; the local reactions, which lessened as treatment progressed, constitute an argument in favour of this theory.

182 Hepatic Extract in General Paralysis

F. JEDLOWSKA (*Arch. di Patol. e Clin. Med.*, March, 1934, p. 560) records his observations on thirty-four cases of general paralysis, tabes, and dementia praecox which had undergone malariotherapy and were in consequence in a state of profound anaemia. He found that daily subcutaneous injection of small doses (2 c.cm.) of liver extract for a period of ten days caused a rapid restoration of body weight and return to normal in the number of red cells and haemoglobin value. The return to normal conditions was much more rapid and obvious than that obtained by the usual methods, and was complete from ten to fifteen days after commencement of treatment, when controls were still in a state of profound anaemia.

Disease in Childhood

183 Vitamin C in the Nursling

P. ROHMER, N. BEZSSONOFF, and E. STOERR (*Bull. de l'Acad. de Méd.*, June 19th, 1934, p. 871) record attempts to determine the need of vitamin C in the dietary of infants. Their study is based on urinary tests, and definitely proves that the healthy normal nursling can, unlike the adult, synthesize vitamin C in considerable quantities. This function, particularly active during the first months of life, decreases towards the eleventh month, and is definitely lost after the first year. Synthesis of the vitamin is physiologically effected from a substance of unknown nature—"provitamin"—which occurs in raw human and boiled cows' milk in sufficient amounts to satisfy the infants' needs. Hence, orange or lemon juice is unnecessary during the first months, but nourishment containing the provitamin is important. The considerable quantity of the vitamin synthesized by the normal infant indicates its great need of this substance. All lowering of the synthetic function due to an infectious or other cause produces troubles, the cure of which lies in the supply, sometimes large, of vitamin C. After the sixth month the power of synthesis begins to decrease; therefore, from this period an addition, more and more indispensable as the end of the first year is approached, of this principle is indicated.

184 Congenital Athetosis

J. BEAUFAYS (*Zentralbl. f. Gynäk.*, June 2nd, 1934, p. 1279) describes a case in which a healthy mother, aged 21, gave birth to a slightly premature infant whose left arm was at once noticed to show little motility; next day athetosis was noted therein, with tonic flexion of the index and hyperextension of the other fingers, alternating with reversed respective positions. A diagnosis of haemorrhage in the corpus striatum was considered, but next day the condition was symmetrically bilateral; this, together with a tendency to opisthotonos, both of which persisted, established the existence of congenital athetosis. Athetosis is rarely noted at so early a stage, and is due to areas of degeneration scattered in the corpus striatum, the inhibitory action of which on the globus pallidus is diminished. Typical features of this case were: the premature birth (probably accelerated by forcible intra-uterine athetotic cramps); maternal perception of unusually active foetal movements; a protracted asphyxial tendency after birth, due to affection of the motor control of respiratory movements; and diminution of athetosis when the infant was laid on the belly.

185 Chloral Hydrate in Paediatrics

According to E. D. ANDERSON (*Minnesota Med.*, April, 1934, p. 184) chloral hydrate, in common with other drugs, is inadequately employed in the diseases of children. In the exhaustion following severe infantile colic, even though the cause is obscure, it can be given by mouth in 1-grain doses before each feeding, and will in most cases afford immediate relief, while bad sleeping habits can be checked by giving it per rectum at bedtime for two or three nights. In attacks of cyclical vomiting and in the vomiting due to acute upper respiratory infections, marked dehydration or acidosis may be arrested by the rectal administration of doses large enough to put the child to sleep, and these may be repeated if necessary at intervals of four to six hours so as to ensure sleep for eight to twelve hours. At the end of this time nausea and vomiting will often have been brought to an end. If in the course of an acute illness there is extreme restlessness due to toxaemia rather than to severe pain, such as in acute pneumonia, the introduction of chloral by the rectum will often have good results. It may also be used before the performance of certain diagnostic and therapeutic procedures, such as spinal punctures, blood transfusions, and the injection of subcutaneous or intraperitoneal fluids. In a possible case of acute appendicitis the administration of an adequate amount of the drug by the rectum will induce muscular relaxation without affecting muscle spasm, and permit more careful examination. It may also be given after an operation when the child is beginning to recover from the anaesthetic; fear and physical discomfort will be removed by the induction of sleep, and on awakening finally there will be much less nausea and distress. This procedure is said to be particularly effective after tonsillectomy, and to promote convalescence markedly. Anderson has found it necessary to give larger doses than are usually recommended in the textbooks. To control convulsions or induce sleep, rectal doses of 5 grains are advised in infants under 6 months old, from 5 to 7½ grains in infants of 6 to 12 months, from 7½ to 10 grains in children aged between 1 and 2 years, and from 10 to 20 grains in older children. Even higher doses are required in some cases of convulsions.

186 Endocarditis in Still's Disease

L. SAIMOVICI (*Thèse de Paris*, 1934, No. 389), who records five illustrative cases in children aged from 3 to 12 years, one of which is original, states that endocarditis is a rare occurrence in Still's disease. It may assume the form of a malignant attack with a protracted course or a malignant attack of rapid course and streptococci in the blood. Saimovici's case was that of a boy, aged 7 years, who had been the subject of a febrile disease for four months. During the first three and a half months he had suffered from subacute rheumatism closely resembling Still's disease, and it was only in the last fortnight that he developed symptoms of a fatal infective syndrome consisting in anaemia, haemorrhages in the skin, and enlargement of the spleen indicating malignant endocarditis, the presence of which was confirmed by the necropsy.

Obstetrics and Gynaecology

187 Prophylactic Intervention in the Second Stage of Labour

J. R. GOODALL (*Surg., Gynecol. and Obstet.*, May, 1934, p. 882) argues that, with experienced hands and sound judgement, prophylactic intervention in the second stage of labour and suturing reduce the amount of damage to the abdominal wall, involve minimal trauma to the supports of the uterus and the bladder, ensure a completely repaired pelvic floor and the restoration to the normal of any previous obstetrical damage, and effect a very considerable reduction in the number of stillbirths. Such intervention, moreover, reduces fatigue and prevents exhaustion, while it relieves the patient and shortens labour. In the first stage of labour the approach of the uterine isthmuses to the pelvic wall renders the normal uterine supports excessively lax, especially the pubo-uterine and the sacro-uterine ligaments. When the cervix is fully dilated the uterine ends of these ligaments are stretched to five times their previous size, and consequently thinned as a whole. As the presenting part descends, the whole force of the contraction and retraction of the upper segment against the lower vagina and perineum is borne by the uterine attachments, and a tendency develops to tearing away from the cervix, causing small interstitial haemorrhages. The author describes his procedure to diminish the various risks. It includes manual acceleration of any incomplete rotation, drawing down of the head with forceps if necessary, incision of the perineum, and rapid removal of the placenta. A special plan of suturing repairs the damage and prevents subsequent prolapse. The method is painless in most cases, but three types of cases do not heal well—namely, those in which the head has been allowed to rest too long on the pelvic floor, severely toxic cases, and cases of prolonged dystocia which have become infected before

the completion of labour. When multiparae come for delivery with an obviously damaged vaginal floor and a marked degree of cystocele, the author incises the perineum as in his usual procedure, and extensive denudation and perineorrhaphy are performed. He claims also that his foetal mortality rate has been reduced by 75 per cent. The majority of stillborn children have died during the second stage of labour, owing to impeding of the circulation through the placenta, spasm of the tired uterus, and the growing frequency of the pains. Goodall believes that much of the foetal death rate attributed to forceps is really due to the delay in their application, and that such prophylaxis as he indicates will be effective in most cases.

188 Senile Involution of the Mammary Gland

R. GATTA (*Arch. Ital. di Chir.*, May, 1934, p. 529), as the result of the examination of the breasts of thirty-five women, all but nine of whom were over 40, comes to the following conclusions. In senile involution of the mammary gland there is a gradual disappearance of the fibrillary connective tissue, which is replaced by adipose tissue. Definite limits cannot be assigned to this involution, which begins directly after the menopause, but sometimes does not become complete until extreme old age. During the involution, side by side with the regressive process, the parenchyma presents in every case proliferations which become particularly numerous after the menopause. The dilatations of the alveoli and lactiferous ducts which develop after the menopause are to be attributed to the direct activity of the epithelium and not to a sclerogenic action of the connective tissue. They must be distinguished from the cysts due to stasis, which are few in number and often absent, but become more numerous after the menopause. Eosinophil cells are found in the female breast after the menopause, being derived from the normal cells of the gland, of which they represent a final stage. The appearance presented by the breast during its involution partly resembles that of cystic fibrosis, but there are always differences in the intensity of the proliferative processes which allow the two conditions to be distinguished.

189 Manual Extraction of the Placenta

J. SEJRSEN (*Ugeskrift for Laeger*, June 7th, 1934, p. 589) finds that among 21,568 confinements at his maternity hospital in Denmark there were seventy cases in which the placenta was extracted by the hand, thirty-six cases in which a retained cotyledon was thus removed, two cases in which the hand was introduced for the removal of membranes, and three cases in which intrauterine palpation was undertaken. Among this total of 111 cases there were nine deaths, but only three of them could be traced with any justification (and to a limited degree) to the introduction of the hand into the uterus. Complete retention of the chorion occurred in 106 cases, one of which terminated fatally from puerperal fever. Among the remaining 105 cases there were fifty presenting some complication or other, such as fever, but the average duration of the patients' stay in hospital was only between fifteen and sixteen days—a state of affairs suggesting that complete retention of the chorion has little influence on the puerperium. The author concludes that, though retention of the membranes may often give rise to fever for some days, such retention should not be taken too seriously, and should not as a rule be an indication for manual extraction. On the other hand, if there are doubts as to the retention of part of the placenta itself, or if there is haemorrhage, it is well to explore with the hand and, in the process of such exploration, to remove any membranes which may be retained. The retention of a placental polypus is such a serious complication that, when in doubt, it is better to palpate the cavity of the uterus once too often than not often enough. Turning to the literature the author finds that manual extraction of the placenta has been undertaken in from 0.3 to 3.27 per cent. of all confinements. The latter figure is from a Russian source and refers to observations made since 1928. It is apparently not only the growing frequency of abortions in Russia which is responsible for this high ratio, but also the greater enterprise shown in the conduct of confinements.

Pathology

190 Biological Properties of Ultra-short Waves

G. IZAR and P. MORETTI (*Klin. Woch.*, May 26th, 1934, p. 771) summarize as follows their findings, published in Italian journals, concerning short (highest frequency) waves of 1 to 50 metres, and believe that their action is due to electrical rather than thermal effects. Radiation of the animal kidney with waves of 8 metres diminished the blood urea without increasing that of the urine. Human blood-sugar content is unaffected by radiation of the upper abdomen, but as a rule the erythrocyte content is temporarily diminished, the leucocyte count temporarily increased. Certain bacteria are killed by 4 or 8 metre waves, and unaffected by longer ones. Human agglutinins may lose their activity, but complement in animal serum is, in general, not destroyed, after application of the shortest waves. The writers now report that 4 to 15 metre waves increase definitely the catalytic activity of colloidal copper with respect to hydrogen peroxide.

191 Ascorbic Acid in the Chick Embryo

E. MARTINI and A. BONSIGNORE (*Biochim. e Terap. Speriment.*, May, 1934, p. 169) point out that vitamin C is found in practically all animal tissues, though in very varying amounts in different organs. In the guinea-pig the amount appears to depend strictly on the diet, while in animals such as the rat and the hen ascorbic acid can be demonstrated in the tissues even after long periods of vitamin C deficient diet. In order to find out whether these anima's are liable to synthesize ascorbic acid, the authors carried out an experiment on developing chick embryos. The technique used to demonstrate the presence of this substance was one worked out by themselves, and depended on the reducing action of a weakly acid solution of ascorbic acid on methylene-blue under the influence of strong illumination. Eggs of white Leghorn hens were incubated at 38° to 39° C., and were examined at suitable intervals, the embryos being dissected out and ground up with sand in trichloracetic acid. The extract, after treatment with an alkaline solution, was then tested by the methylene-blue technique. During the first three days of incubation no ascorbic acid could be demonstrated, but on the fourth day traces were found, and the amount continued to increase till the twelfth day, when 0.17 mg. was found per gram of embryo. During the next few days the amount decreased, and then became stabilized from the fifteenth day onwards at about 0.09 mg. per gram of embryo. The ascorbic acid was found only in the embryo itself. Glutathione, on the other hand, which was estimated by the iodine technique, was found distributed through both the embryonic and non-embryonic parts of the egg. The authors assume that the methylene-blue-reducing substance found in the extracts was ascorbic acid, and suggest that this substance must be synthesized in the developing chick embryo.

192 Natural Immunity in Syphilis

W. SIDOROWICZ (*Thèse de Paris*, 1934, No. 386) records ten cases in persons aged from 22 to 30 who, in spite of numerous exposures to virulent syphilitic infection, did not contract the disease. The occurrence of such cases raises the possibility of the existence of immunity to syphilis. There is, however, no experimental evidence in confirmation of this hypothesis. The suggestion that these refractory cases were due to the presence of hereditary syphilis was negatived by the fact that the individuals in question did not present any dystrophies or stigmata of that disease, and repeated serological tests were invariably negative.

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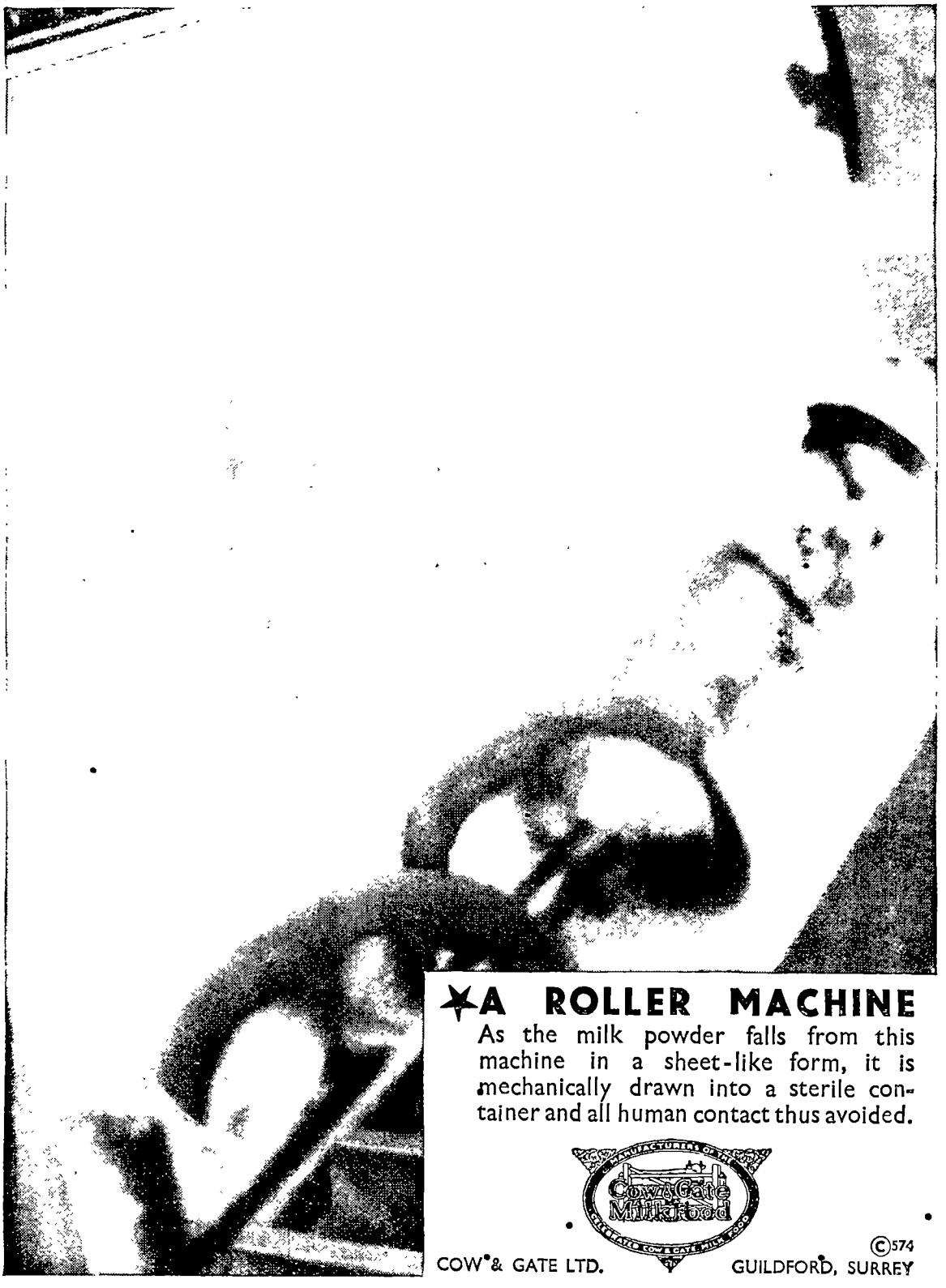

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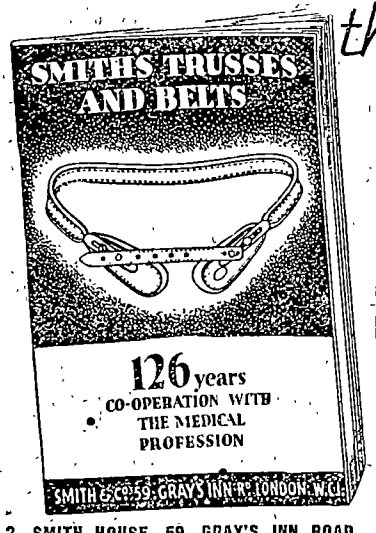

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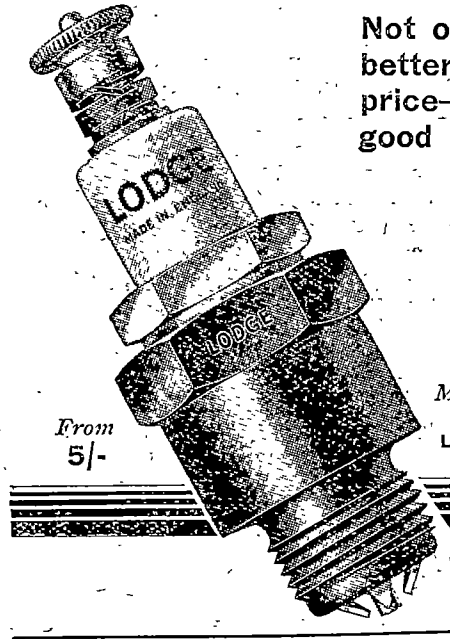

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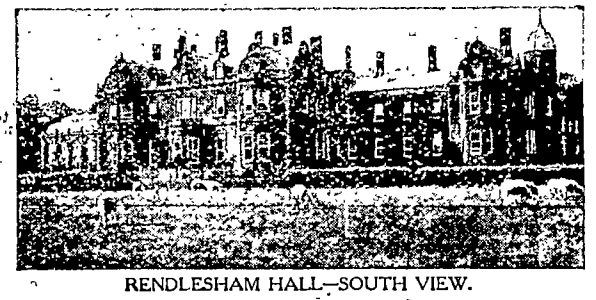

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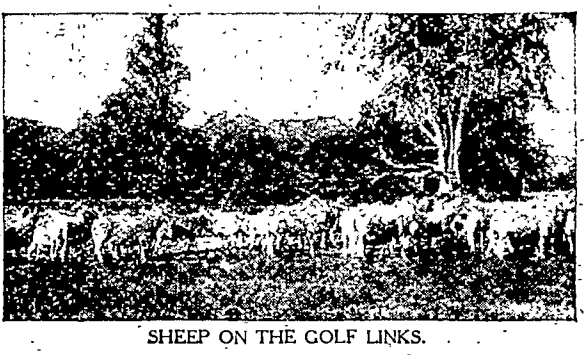

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Address—THE SECRETARY, Ruthin Castle, North Wales. *Telegrams*: CASTLE, RUTHIN. *Telephone*: RUTHIN 66.

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A NURSING HOME (opened in 1927) for the investigation and treatment of all types of Functional Nervous Disorders and early mental illnesses.

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A registered Hospital for Nervous and Mental Diseases.

The Hospital is pleasantly situated in one of the suburbs of York and affords excellent accommodation at very moderate terms. Voluntary, Temporary, and Certified patients are received.

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Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741-4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Certified voluntary and temporary patients are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearnsey Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis Courts. Entertainments, dances, and indoor amusements held throughout the year. Terms from £3 3s. per week.

Illustrated prospectus and further particulars can be obtained from the MEDICAL SUPERINTENDENT.

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LONDON, W.1

(University of London)

THE WINTER SESSION will Open on October 1st, 1934.

The Medical School and Hospital occupy a central position within a few minutes' walk of Oxford Circus. They are fully equipped for teaching the entire medical curriculum, both for University Degrees and the Conjoint Course.

The new West Wing of the Hospital is fully occupied: the rebuilding of the remainder is proceeding without the loss of a single bed: the remodelled Out-Patient Department continues to expand: the newly built quarters for the Resident Officers afford greatly improved facilities. These, with other new buildings, including modern and well equipped laboratories, give to the Middlesex Hospital and its Medical School the most up-to-date facilities obtainable in Great Britain. The wards of the Archway Hospital, Highgate, containing 600 beds, are also available for medical and surgical demonstrations for students of this Medical School.

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Numerous Resident Appointments are afforded annually to newly qualified students. NINE REGISTRARS are also appointed annually. SCHOLARSHIPS and PRIZES of a value exceeding one thousand pounds are awarded each year. Large athletic grounds, common rooms, a well equipped restaurant and gymnasium are provided. A squash racquets court is available.

The Students' Amalgamated Clubs include Rugby and Association Football, Hockey, Cricket, Sailing, Fencing, Golf, Rowing, etc.

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Further particulars and a prospectus may be obtained on application to the School Secretary, Middlesex Hospital, Mortimer Street, W.1.

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Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

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The course is arranged for those who can only give a limited time in the week and also those who wish to specialise. The number to be admitted is limited and applications must be received by SEPTEMBER 17th.
For particulars of the course apply to the Hon. Lecture Secretary, Malet Place, W.C.1.

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Open only to Members of the Fellowship of Medicine. Annual Subscription £1 1s.

CHEST DISEASES (Brompton Hospital, September 24th to 29th, all day); PROCTOLOGY (Gordon Hospital, September 24th to 29th, all day); CHILDREN'S DISEASES (Queen's Hospital, October 1st to 13th, all day); DERMATOLOGY (St. John's Hospital, October 1st to 27th, afternoons); PHYSICAL MEDICINE (St. John's Clinic, October 1st to 27th, evenings). DEMONSTRATION on GENERAL MEDICINE every Tuesday afternoon, 2.30 p.m., at Medical Society.

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(UNIVERSITY OF LONDON)
Incorporating the Ross Institute.

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(Each part can be taken independently, but not concurrently.)

SECTION A (CLINICAL AND LABORATORY INSTRUCTION).
October 1st—December 21st, 1934.
January 7th—March 30th, 1935.
April 8th—June 28th, 1935.

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Special courses of study by arrangement.

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Course of Study (whole-time, nine months) commencing October 1st. Inclusive fee, 54 gns.

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Course of Study (whole-time, one academic year) commencing in October. Inclusive fee, £47 15s.

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Special three-monthly advanced courses. Inclusive fee, 7 guineas.

For Prospectuses and Synopses of Lectures, etc., apply to the SECRETARY, LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, Keppel Street (Gower Street), London, W.C.1. (Museum 3041.)

MANCHESTER ROYAL INFIRMARY.

POST-GRADUATE LECTURES and DEMONSTRATIONS will be given by Members of the Honorary Staff on Medical, Surgical, and Special Subjects, each week on Tuesdays and Fridays, from Tuesday, September 25th to Tuesday, December 18th. All lectures begin at 4.15 p.m. and are free. Details may be obtained from the Secretary for the Post-graduate Lectures.

On Tuesday, November 6th, Professor F. A. E. CREW of Edinburgh will deliver the Royal Infirmary Lloyd Roberts Lecture "Medicine and the Further Evolution of Society." This will be given at the Manchester Royal Infirmary in place of the usual lecture.

ROYAL NAVAL DENTAL SERVICE.

The Admiralty is prepared to receive applications for commissions as DENTAL OFFICERS in the Royal Navy. Two appointments are offered.

Candidates must be below 28 years of age on November 1st (unless granted an allowance for age, not exceeding six months, in respect of a period served in a recognised whole-time civil hospital appointment) and must be registered as British Graduates or Licentiates in Dental Surgery.

Approved candidates will be required to appear before a Selection Committee at the Admiralty, and to pass a medical examination by a Board of Naval Medical Officers as to their physical fitness for entry.

A pamphlet outlining the conditions of service and the forms to be completed by candidates may be obtained on application to the Medical Director-General of the Navy, Admiralty, London, S.W.1.

Applications, accompanied by the necessary documents, must reach the Medical Director-General not later than October 1st.

KENT AND CANTERBURY HOSPITAL, CANTERBURY. (137 Beds.)

HOUSE SURGEON (Male) required to commence duties at end of September. Six months' appointment. Salary payable at the rate of £125 per annum, plus board, residence, and laundry. There are two other Resident Medical Officers. Duties include care of Ear, Nose, and Throat cases.

Applications, stating age, and particulars of qualifications, and enclosing copies of testimonials, should be forwarded to the undersigned as soon as possible.

J. F. KENT, Supt. & Secretary.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

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CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the Higher Medical Examinations. Suggestions for the Higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

MONTAGU HOSPITAL MEXBOROUGH, YORKS.

Applications are invited for the position of JUNIOR HOUSE SURGEON (lady) at the above Hospital. Commencing salary £100 per annum, with 1 month holiday annually. The usual board-residence is also found. The Hospital has 64 Surgical beds, and 20 Maternity beds. Applicants should state their experience in the administering of Anaesthetics, and give the earliest date they will be at liberty to take up duties. Applications should be forwarded to the undersigned, together with testimonials, at the earliest possible moment.

DONALD WILSON, Secretary.

NORFOLK AND NORWICH HOSPITAL, NORWICH. (392 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned not later than Tuesday, September 18th.

FRANK INCH,
Sept. 7th, 1934. House Gov. & Secretary.

NOTTINGHAM CHILDREN'S HOSPITAL.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN (Woman). The salary will be at the rate of £150 per annum, with apartments, board, and laundry. The appointment will be for six months, duties to commence on November 1st.

Applications, together with testimonials, and stating age, qualifications, and experience, to be sent to F. PRAGNELL, the Honorary Secretary, 1, King John's Chambers, Bridlesmith Gate, Nottingham, by September 17th. Selected candidates will be required to attend at the Hospital for a personal interview on September 25th, when the appointment will be made.

CHARTERED SOCIETY of MASSAGE & MEDICAL GYMNASTICS

President: LORD MOYNIHAN OF LEEDS, K.C.M.G., C.B., M.S., F.R.C.S.

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Or from the—

Secretary (Dept. B.), C.S.M.M.G., Tavistock House (North), Tavistock Square, London, W.C.1. 'Phone: Euston 1676-7-8.

CITY OF BIRMINGHAM.

MENTAL DEFICIENCY ACT COMMITTEE.

MONYHULL COLONY-CERTIFIED INSTITUTION.

JUNIOR MALE ASSISTANT MEDICAL OFFICER.

The Committee invite applications for the above whole-time appointment from duly qualified and registered male Medical Practitioners. Candidates must have held for at least six months a medical or surgical residential appointment in a general hospital, and preference will be given to those with mental experience.

The commencing salary will be £350 per annum, rising by annual increments of £25, subject to satisfactory service, to £450 per annum, plus the usual residential emoluments of board, lodging, laundry, and attendance, valued at £200 per annum for superannuation purposes. An additional £50 per annum will be paid for the possession of an approved post-graduate qualification in psychological medicine. No married quarters are available.

The successful candidate will be required to pass satisfactorily a medical examination and after a probationary period to join the scheme under the Asylums and Certified Institutions (Officers' Pensions)-Act, 1918. The appointment is subject to one month's notice on either side.

Applications, stating full particulars of qualifications, experience, and appointments held, accompanied by copies of three recent testimonials, must be addressed to the undersigned so as to be received not later than Friday, September 28th.

Council House, Birmingham. F. H. C. WILTSHIRE, Town Clerk.
August 27th, 1934.

LONDON COUNTY COUNCIL.

Applications invited for appointment as RESIDENT MEDICAL SUPERINTENDENT, Southern Hospital, Dartford, the Upper Hospital (777 beds) for convalescent infectious cases and Lower Hospital (767 beds) for acute or convalescent infectious cases or for convalescent non-infectious cases. Person appointed will be under direction of Medical Officer of Health and must assist at other establishments of the Council if so required. Salary £1,100—£50—£1,350 a year, with the emolument of unfurnished house or quarters, including payment by the Council of local and water rates, valued for superannuation purposes at £100 a year, subject to review. Candidates other than members of the Council's medical staff must be not over 55 years of age; must have been duly qualified medical practitioners for at least five years, and house physician or house surgeon in a public general hospital and have had experience of administration of hospital for infectious diseases. Experience in small-pox is desirable but not essential. Application forms obtainable (stamped addressed foolscap envelope necessary) from Clerk of the Council, County Hall, S.E.1, returnable by September 24th. Canvassing disqualifies.

THE RADIUM INSTITUTE, Riding House Street, London, W.1.

Applications are invited for the post of HOUSE SURGEON. Candidates must be fully qualified, unmarried, and of British nationality. The appointment is for a term of six months, and the successful candidate will be required to take up his duties on October 1st next. The salary will be at the rate of £150 per annum, with board, lodging, and laundry.

Applications, stating age, qualifications, and experience, with copies of three recent testimonials, must be received at the Institute not later than the first post of Wednesday, September 19th.

THOS. A. GARNER, Secretary.

BOROUGH OF CHEPPING WYCOMBE.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH, SCHOOL MEDICAL OFFICER, MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE, AND POLICE SURGEON.

Applications are invited for the above appointment at a salary of £800 per annum.

The gentleman appointed will be required to devote the whole of his time to the duties of the office.

The appointment will be subject to the approval of the Minister of Health, the Board of Education, and the Secretary of State for the Home Department, and to the provisions of the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926, and the successful candidate will be required to pass a medical examination.

Forms of application and particulars of appointment may be obtained from the undersigned, to whom they must be returned, accompanied by copies, of not more than three recent testimonials, and endorsed "Medical Officer of Health," not later than Monday, Oct. 15th.

Canvassing, either directly or indirectly, will be deemed a disqualification.

PHILIP B. BEECROFT, Town Clerk.
Municipal Offices, High Wycombe.
September 11th, 1934.

CORPORATION OF GLASGOW.

PUBLIC HEALTH DEPARTMENT.

JUNIOR RESIDENT MEDICAL OFFICER (male) wanted for HAWKHEAD ASYLUM. Commencing salary £300 per annum, with board, lodging, and laundry. Previous asylum experience unnecessary, but preference will be given to one who has been engaged in pathological work or who has been House Physician. Ample opportunity afforded for research.

Applications, stating age and experience, and accompanied by copies of not more than three testimonials, to be sent by October 1st, to the Medical Superintendent, Hawkhead Asylum, Crookston, Glasgow, S.W.2.

CAMBRIDGESHIRE COUNTY COUNCIL.

MEDICAL OFFICER OF HEALTH.

Applications are invited for the post of County Medical Officer of Health for the Administrative County of Cambridge from men of not more than 50 years of age who are duly qualified Medical Practitioners registered in the *Medical Register* as holders of a diploma in sanitary science, public health, or state medicine. The salary offered is £1,000 per annum, and the post is designated for purposes of superannuation.

Further particulars and a form of application can be obtained from the Clerk of the Cambridgeshire County Council, Shire Hall, Cambridge. Applications must be received not later than Monday, September 24th.

CITY AND COUNTY OF BRISTOL.

HAM GREEN HOSPITAL AND SANATORIUM.

JUNIOR ASSISTANT RESIDENT MEDICAL OFFICERS (Male and Female).

Applications are invited for the above appointments which are tenable for 12 months at a salary of £250 per annum. The Institution consists of 266 fever beds and 160 beds for all forms of tuberculosis. Candidates should have held a resident appointment in a general hospital for at least six months, and in the case of the Female Medical Officer should have gynaecological experience.

Applications, accompanied by copies of three recent testimonials, to be sent to the Medical Officer of Health, 40, Prince Street, Bristol, 1, not later than September 18th.

EAST LANCASHIRE TUBERCULOSIS COLONY, BARROWMORE HALL, GREAT BARROW, NEAR CHESTER.

(Under the direction of the British Red Cross Society and the Order of St. John of Jerusalem.)

HOUSE PHYSICIAN (male) required.

The appointment is for six months, and is renewable. Salary £100 per annum, with board, residence, and laundry.

The appointment is terminable by one month's notice.

The Institution deals with all stages of Pulmonary Tuberculosis, and comprises Hospital accommodation, sanatorium accommodation, extensive workshops for graduated work, and a settlement.

Applications, marked "House Physician," with copies of three testimonials, to be sent to the Medical Superintendent at the above address before September 18th.

CITY OF BIRMINGHAM.

DUDLEY ROAD HOSPITAL. (926 Beds.)

Applications are invited from fully qualified Medical Practitioners for whole-time appointment as JUNIOR MEDICAL OFFICERS (Male) at the DUDLEY ROAD HOSPITAL, Birmingham. The appointment will be for a period of six months, but may be extended for a further period of not exceeding six months. Salary at the rate of £200 per annum and full residential emoluments. The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

Further particulars may be obtained from the Medical Superintendent at Dudley Road Hospital, to whom applications, stating age, experience, and qualifications, with copies of recent testimonials, should be forwarded not later than September 27th.

QUEEN'S HOSPITAL, BIRMINGHAM.

(A Medical School.)

Applications are invited for the post of RESIDENT ANAESTHETIST to commence duties at once.

Salary £70 to £100 p.a. (according to experience and previous Hospital Resident Appointments), together with board, apartments, and laundry.

Applications should be sent to the undersigned, accompanied by three recent testimonials.

Birmingham. G. HURFORD, September 4th, 1934. House Governor.

ROYAL ALBERT HOSPITAL AND EYE INFIRMARY, DEVONPORT.

The post of ASSISTANT HOUSE SURGEON exists.

Applicants must be fully qualified, registered, and unmarried. Salary £100 per annum, with apartments, board, and laundry free.

Applications, stating age, accompanied by copies of not more than three testimonials, should be forwarded to the undersigned without delay.

By Order of the Committee,
FRANK ROWE, Secretary.

HERTFORD COUNTY HOSPITAL

Applications are invited for the post of HOUSE PHYSICIAN (Male). Salary £150 per annum, with board, residence, and laundry. Duties to include Casualty, Obstetrics, and some Surgical work. The appointment to be for six months in the first instance commencing October 1st.

Applications, together with copies of three recent testimonials, should be forwarded to the undersigned not later than September 25th.

ANCOATS HOSPITAL, MANCHESTER.

ASSISTANT PATHOLOGIST (Lady or Gentleman). Whole-time appointment, no private work allowed. Salary £300 to £350, according to experience, live out. Luncheon and tea provided.

MEDICAL REGISTRAR (Lady or Gentleman). To assist the Honorary Physician in the Out-patient department on Monday, Wednesday, and Thursday mornings. Honorarium £50 per annum. Appointment for 12 months, renewable on January 1st of each year.

RESIDENT MEDICAL OFFICER to commence duty on October 1st. One having held a previous appointment essential. Appointment for six months. Salary at the rate of £150 per annum, with board, residence, laundry, etc.

HOUSE PHYSICIAN to commence duty on October 1st. Duties include charge of a few medical beds and some casualty work. Appointment for six months. Salary at the rate of £100 per annum, with board, residence, laundry, etc.

Applications are invited for the above posts from duly qualified and registered Medical Practitioners. Applicants should state age, qualifications, experience, and give full particulars and forward their applications as early as possible but not later than September 25th, together with copies of three recent testimonials.

By Order of the Board.
HERBERT J. DAFFORNE.
General Supt. & Secretary.

THE LONDON LOCK HOSPITAL, 283, Harrow Road, W.9.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (either sex) to the Female Departments. Candidates must be doubly qualified and duly registered. The appointment is for six months commencing October 5th. Salary at the rate of £175 per annum, with furnished rooms, full board, and laundry. Preference will be given to candidates having previous Obstetric experience. Applications, enclosing copies (only) of three recent testimonials, must be in the hands of the undersigned by 10 a.m. on Wednesday, September 26th, and from whom a copy of the Bye-laws relating to the appointment, or any further particulars, can be obtained.

By Order of the Board,
J. F. MORTON,
September 4th, 1934. Secretary.

LONDON LOCK HOSPITAL, 91, Dean Street, W.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER to the Male Departments. Candidates must be doubly qualified and duly registered. The appointment is for six months commencing October 5th. Salary at the rate of £175 p.a., with furnished rooms at the Harrow Road Hospital, full board and laundry. Applications, enclosing copies (only) of three recent testimonials, must be in the hands of the undersigned by 10 a.m. on Wednesday, September 26th, and from whom a copy of the By-laws relating to the appointment, or any further particulars, can be obtained.

By Order of the Board.
J. F. MORTON,
September 4th, 1934. Secretary.

THE HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.9.

A RESIDENT MEDICAL OFFICER required November 1st.

HOUSE PHYSICIAN required November 1st.

Applications are invited for these posts. The salaries are at the rate of £150 and £100 per annum respectively, and the appointments are for six months. Candidates for the post of Resident Medical Officer should state if they are willing to take that of House Physician, and applications, accompanied by copies of three recent testimonials, should reach me by September 29th. The accommodation at the Hospital does not permit of Women Graduates holding these appointments.

H. W. BURLEIGH,
Secretary and General Supt.

WALSALL GENERAL HOSPITAL.

The Committee invite applications from Men or Women for the post of HOUSE SURGEON. Must have had previous experience in the administration of Anaesthetics. Candidates, who must be registered under the Medical Acts, must produce three recent testimonials. The appointment will be for six months, and will be vacant early in October. Salary at the rate of £150 per annum.

The Hospital will very shortly contain 146 beds, and is equipped in all Special Depts.

Applications, stating age, qualifications, and nationality to be sent at once to the undersigned.

WALTER FRANCOMBE,
September 5th, 1934. House Governor.

THE ROYAL INFIRMARY OF EDINBURGH.

The Board of Managers invite applications for the post of RADIOLOGIST to the Royal Infirmary.

The appointment is a whole-time one in association with the University Lectureship in Radiology. The combined salary is at the rate of £1,500 per annum.

Candidates, who must be duly qualified Medical men, should hold a Diploma in Radiology, and have had experience in the control of a large X-ray Department. Experience in Radium Therapy is also essential.

The successful candidate will be expected to take up duty in January, 1935.

Applications should be received by the undersigned on or before Saturday, September 29th, and must be accompanied by copies of not more than four testimonials. Thirty copies of the letter of application and testimonials will be required.

By Order of the Board of Managers,
HENRY MAW,
Secretary and Treasurer.

DORSET COUNTY HOSPITAL, DORCHESTER.

APPOINTMENT OF HOUSE SURGEON.

The Committee of Management are open to receive applications for the position of House Surgeon, to take up his duties on or about October 6th.

Every candidate must be unmarried and possess a registered qualification to practise Medicine and Surgery from some recognised body in Great Britain or Ireland.

Salary £160 per annum, with board and lodging. The appointment is for a period of six months. All applications, accompanied by copies of three recent testimonials, should be sent to the Secretary, Dorset County Hospital, on or before Monday, September 24th.

Candidates must be of British birth and nationality.

ROYAL FREE HOSPITAL, Gray's Inn Road, London, W.C.1.

Applications are invited from duly qualified and registered Medical Men or Women for the post of ANAESTHETIC REGISTRAR at the above Hospital for one year from November 1st next with option to apply for re-appointment for two subsequent years.

The post is a resident one and carries with it a remuneration of £100 per annum. Candidates should have had experience in all forms of anaesthesia, especially dental work.

Applicants should submit applications, stating age and qualifications, to the undersigned on or before September 29th.

RICHARD S. BARTLEY, Acting Sec.

ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

WANTED.

ONE MEDICAL OFFICER to the Special Departments and RESIDENT ANAESTHETIST (dual appointment). Salary £60 per annum, including board and residence.

ONE RESIDENT CASUALTY OFFICER. Salary £100 per annum, including board and residence.

The appointments will be for six months, duties commencing as from October 1st.

Applications and copies of testimonials, to be sent to the undersigned at once.

FRANK SOLMAN, Supt. & Secretary.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.1.

Applications are invited for the post of HOUSE PHYSICIAN (male) for six months from October 12th (first two months in Casualty and Out-patient Department). Salary at the rate of £120 per annum, with board and residence.

Applications, stating age, experience, and qualifications, accompanied by copies of four testimonials, to be sent not later than September 24th to the undersigned, from whom rules and other particulars can be obtained.

By Order of the Committee of Management,
W. H. SIDNELL,
Sept. 3rd, 1934. Secretary-Supt.

ROYAL DEVON AND EXETER HOSPITAL, EXETER. (225 Beds.)

SENIOR HOUSE SURGEON (Male).

Applications are invited for the above Resident appointment becoming vacant at this Hospital on October 1st. Engagement for twelve months, candidates eligible for re-election.

Salary at the rate of £250 per annum, with board, apartments, and washing.

Applications, stating age, qualifications, and copies of three recent testimonials, should be sent to the undersigned on or before Monday, 17th inst.

S. S. COLE,
Sept. 1st, 1934. Secretary & Manager.

ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE. (731 Beds.)
(Open Appointment.)

The House Committee invite applications for the post of HONORARY ASSISTANT to the Orthopaedic Department.

According to statutory provision every candidate must be a registered Graduate in Surgery of any University recognised by the General Council of Medical Education and Registration of the United Kingdom, or a registered Fellow, Member, or Licentiate of one of the Royal Colleges of Surgeons of the United Kingdom, provided that he is practising as a Surgeon and not as a General Practitioner. It is desirable that applicants should be Fellows of the Royal College of Surgeons, England.

Applications must be sent to the House Governor and Secretary, Royal Victoria Infirmary, Newcastle-upon-Tyne (from whom further particulars may be obtained), not later than Saturday, September 29th.

The appointment will be made on Thursday, October 4th.

Personal canvassing will be considered a disqualification for office. Candidates may, if they so desire, forward a copy of their applications and testimonials to each member of the House Committee.

S. DUNSTAN,
September 7th, 1934. House Gov. & Sec.

ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE, AND UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

Applications are invited from registered Medical Practitioners for the joint post of JUNIOR ASSISTANT in the Pathological Department of the Royal Victoria Infirmary and DEMONSTRATOR in the University of Durham College of Medicine, Newcastle-upon-Tyne.

Salary is at the rate of £300 per annum.

Applications, stating previous experience, with copies of three recent testimonials, must be forwarded on or before September 30th, to the House Governor and Secretary, Royal Victoria Infirmary, Newcastle-upon-Tyne, from whom further particulars may be obtained.

S. DUNSTAN,
Sept. 8th, 1934. House Gov. & Secretary.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone Rd., N.W.1.

ASSISTANT RESIDENT MEDICAL OFFICER (Male) required to commence duty on Oct. 1st.

Applicants must be registered. Appointment for three months. On completion of this appointment the selected candidate will be expected to proceed to the post of Senior Resident Medical Officer (for three months) on the recommendation of the Medical Staff.

The salary of the Assistant Resident Medical Officer is at the rate of £80 per annum and of the Senior Resident Medical Officer £100 per annum, with board, residence, and washing allowance (4/- weekly).

Applications, with copies (not originals) of not more than three testimonials will be received by the Secretary up to September 21st.

H. B. STOKES, Secretary-Supt.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone Road, N.W.1.

DISTRICT RESIDENT MEDICAL OFFICER (male or female) required to commence duty on October 1st. Applicants must be registered. The appointment is for six months. The salary is at the rate of £80 per annum, with board, residence, and washing allowance (4/- weekly).

Applications, with copies (not originals) of not more than three testimonials, should be sent to the Secretary by September 21st.

H. B. STOKES, Secretary-Supt.

RADCLIFFE INFIRMARY AND COUNTY HOSPITAL, OXFORD.

Applications are invited for the post of RESIDENT SURGICAL OFFICER, which will become vacant on October 1st next.

The appointment will be for twelve months with a salary at the rate of £200 per annum, with board, etc.

Candidates must be male.

Applications, with four copies of three testimonials, must be sent to the undersigned, not later than September 25th.

A. G. E. SANCTUARY, Administrator.

RADCLIFFE INFIRMARY AND COUNTY HOSPITAL, OXFORD.

Applications are invited for the post of HONORARY ASSISTANT ANAESTHETIST.

The post carries with it an honorarium of £50 per annum.

Twenty-five copies of applications and testimonials, which will be forwarded to members of the electing committee must be sent to the undersigned, from whom further particulars may be obtained, not later than Tuesday, September 25th.

A. G. E. SANCTUARY, Administrator.

ROYAL ARMY MEDICAL CORPS.

Applications are invited from medical men for appointment to commissions in the Royal Army Medical Corps.

Candidates will for the present be selected for commissions without competitive examination, and will be required to present themselves in London for interview and physical examination on or about October 25th, 1934. They must be registered under the Medical Acts and normally must not be over the age of 28 years.

Successful candidates will in the first instance be given short service commissions for five years, at the end of which period officers may either:

(a) retire with a gratuity of £1,000 or
(b) apply for a permanent commission.

Permanent commissions will be given to officers selected from among those who wish to make the Army their permanent career.

PROFESSIONAL WORK.

Ample opportunity exists in the Army for professional work in Military Hospitals and in Military Families Hospitals.

Candidates who are successful will assemble at the Royal Army Medical College, London, on Thursday, November 1st, 1934.

Particulars including regulations for admission, pay, and allowances, and forms of application may be obtained on application, either in writing or personally, to the Assistant Director-General, Army Medical Services, The War Office, London, S.W.1.

CITY OF PLYMOUTH.

CITY (GENERAL) HOSPITAL. (670 Beds.)

JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified Medical Practitioners for the post of Junior Assistant Medical Officer at the City (General) Hospital, Plymouth.

The salary will be at the rate of £250 per annum, less 2½ per cent. temporary deduction, with full residential emoluments.

The officer will be required to refund to the Council all fees, allowances, and emoluments, other than the foregoing, received by him.

The appointment will be for the period of 12 months, terminable by one month's notice on either side.

The work will be mainly of a surgical nature, and previous experience in a general hospital is desirable.

Further particulars may be obtained from the Medical Superintendent, City Hospital, Plymouth.

Applications, endorsed "Junior Assistant Medical Officer," together with copies of not more than three recent testimonials, should be sent to the undersigned not later than Wednesday, September 26th.

Town Hall, Stonehouse, Plymouth. September 3rd, 1934.
T. PEIRSON, Medical Officer of Health.

CITY OF WAKEFIELD.

APPOINTMENT OF JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners for the post of Junior Assistant Medical Officer in the Public Health Department. Duties mainly in the School, and Maternity and Child Welfare Services.

Salary commencing £500 per annum, and rising by annual increments of £25 to a maximum of £700 per annum.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and the passing of a medical examination.

Applications must be made on forms obtainable from the Medical Officer of Health, Town Hall, Wakefield, from whom further particulars may be had, and, accompanied by copies of three recent testimonials, sent to me not later than September 20th.

Town Hall, Wakefield. August 31st, 1934.
T. NICHOLAS GRIMSHAW, Town Clerk.

COUNTY BOROUGH OF BURNLEY.

DENTAL SURGEON.

Applications are invited from qualified Dental Surgeons (either sex) for the post of School Dental Surgeon. The duties will mainly include the inspection and treatment of school children, but the candidate appointed may be called upon to undertake Dental work in connection with other health services. The candidate appointed will be required to devote the whole of his or her time to the work of the Corporation, and will be under the supervision of the Medical Officer of Health. The salary will be £500 per annum, increasing, subject to satisfactory service, by annual increments of £25 to £700 per annum.

The successful candidate will be required to pass a medical examination by the Council's Medical Officer, and the appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

A copy of the conditions of service and application form may be obtained from the Medical Officer of Health, St. James' Street, Burnley, to whom applications, accompanied by copies of three recent testimonials, must be forwarded not later than Monday, September 24th.

Canvassing, directly or indirectly, will disqualify.

Town Hall, Burnley. September 1st, 1934.
COLIN CAMPBELL, Town Clerk.

ESSEX COUNTY COUNCIL.

PUBLIC ASSISTANCE DEPARTMENT.

JUNIOR RESIDENT MEDICAL OFFICERS.

The Public Assistance Committee invite applications for the appointment of two Junior Resident Medical Officers at the OLDCHURCH HOSPITAL, Romford. The appointments are for one year. Salary £250 per annum, together with the usual emoluments valued at £160 per annum. The successful applicants will be required to pass a medical examination, and will be subject to the Council's Sick Pay Regulations a copy of which will be forwarded upon request. Applications for the above positions to be made on forms obtainable from the Public Assistance Officer, Prudential Buildings, Duke Street, Chelmsford, to whom the forms must be returned by September 21st.

By Order,
County Hall, Chelmsford. September 10th, 1934.
E. S. HOLCROFT, Clerk of the County Council.

COUNTY COUNCIL OF MIDDLESEX.

THE COUNTY (TUBERCULOSIS) SANATORIUM HAREFIELD, MIDDLESEX.

RESIDENT ASSISTANT MEDICAL OFFICER (Male).

The County Council invite applications for the above appointment. Candidates must be registered Medical Practitioners, not over 35 years of age, unmarried, and of British nationality. They must have held resident hospital appointments. Practical experience in the diagnosis and treatment of tuberculosis (including the induction of artificial pneumothorax) will be an additional qualification.

The officer appointed will work under the control of the Medical Superintendent, and devote his whole time to his official duties.

Salary £400 per annum, rising by annual increments of £25 to £475, with board, lodging, and laundry, valued at £100.

The appointment will be held during the pleasure of the Council, and is determinable by one month's notice on either side.

The appointment is a temporary one for a period of four years, at the end of which period the officer will leave the Council's service. In special cases the Council may decide to retain an officer on the established staff, in which case the salary will be increased to £500 per annum, which will be the maximum for an officer in this grade.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, must be received by the undersigned not later than September 22nd.

Canvassing, directly or indirectly, will be a disqualification.

Special application forms are not provided. Envelopes must be endorsed "Assistant Medical Officer, Harefield."

Middlesex Guildhall, Westminster, S.W.1. September 3rd, 1934.
ERNEST S. W. HART, Clerk of the County Council.

JEWISH MATERNITY HOSPITAL, Underwood Street, E.1.

Applications are invited for the post of RESIDENT HOUSE SURGEON. Duties commence October 1st for a period of six months. Salary at the rate of £50 per annum.

Applications, together with copies of three recent testimonials, to be sent to the undersigned not later than September 25th.

ALICE MODEL, Secretary.

CITY OF MANCHESTER.

MONSALL HOSPITAL FOR INFECTIOUS DISEASES. (600 Beds.)

APPOINTMENT OF THIRD RESIDENT ASSISTANT MEDICAL OFFICER.

The Public Health Committee invites applications from qualified Medical Men for the position of Third Resident Assistant Medical Officer (Grade I), at the Monsall Hospital, Newton Heath, Manchester.

Every applicant must be a registered Medical Practitioner, and unmarried. Preference will be given to applicants who have held resident Surgical and Medical posts in a General Hospital, and have taken the Diploma in Public Health, or have special experience in Bacteriology, and who have had previous experience in Fevers.

The candidate appointed will be required to assist in the teaching of the nursing staff and to reside at the Hospital.

Salary £300 per annum, with board, residence, and laundry in addition. No bonus.

The appointment will be for a period of six months, and in any case will be limited to a period of twelve months.

Applications, stating the age, training, qualifications, and experience of the candidate, with copies of three recent testimonials, and endorsed on the envelope "Third Medical Officer, Monsall Hospital," must be addressed to the Medical Officer of Health, Sunlight House, Quay Street, Manchester, only, and not to members of the Committee or Council, and must be received by him not later than September 22nd.

The candidate appointed will be required to commence duty as soon as possible after the appointment, to devote the whole of his time to the duties of the position, to pass a medical examination, to contribute to the Corporation Superannuation Fund, and to execute the Deed of Service.

Canvassing in any form, oral or written, direct or indirect, is prohibited.

Town Hall, Manchester. F. E. WARBRECK HOWELL, Town Clerk.
September 10th, 1934.

COUNTY BOROUGH OF BRIGHTON.

SENIOR RESIDENT MEDICAL OFFICER AT THE BOROUGH INFECTIOUS DISEASE HOSPITAL AND SANATORIUM.

The Council invite applications for the above appointment from duly qualified unmarried male Medical Practitioners.

The salary will be at the rate of £400 per annum, rising by annual increments of £25 to £450, together with board and lodging at the Borough Sanatorium. Preference will be given to candidates entering the Public Health Service.

Forms of applications and particulars of the duties to be performed, and of the conditions upon which the appointment will be made, may be obtained on application to the undersigned.

The post is designated under the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination before being appointed to the position.

Applications (with copies of three recent testimonials enclosed), endorsed "Appointment of Senior Resident Medical Officer," must be delivered at my office before 10 o'clock in the forenoon on Monday, October 1st.

Canvassing members of the Council, either directly or indirectly, will disqualify any applicant for the position.

Town Hall, Brighton, JAS. H. ROTHWELL, Town Clerk.
September 10th, 1934.

ST. MARY'S HOSPITAL, W.2.

VENEREAL DISEASES DEPARTMENT.

Applications are invited for the post of ASSISTANT DIRECTOR (part time) from qualified Medical Practitioners with experience in the treatment of Venereal Diseases. Salary £350 per annum.

The appointment is for a period of one year, the holder being eligible for re-election.

Applications, with copies of testimonials, not exceeding three in number, should reach the undersigned (from whom particulars of the office may be obtained) not later than September 21st.

W. PARKES, House Governor.

KING EDWARD VII HOSPITAL, WINDSOR. (193 Beds.)

HOUSE SURGEON required for six months from October 1st. Applicants must be fully qualified men or women and registered.

Salary at the rate of £100 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials should be sent to the undersigned not later than September 15th.

A. E. CHURCHER, Secretary.

ROYAL DEVON & EXETER HOSPITAL, EXETER.

HOUSE SURGEON (Male) to the Ear, Nose, and Throat Department.

Applications are invited for this post which becomes vacant on Monday, October 1st.

The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £150 per annum, with board, lodging, and washing.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned on or before Monday, 24th inst.

S. S. COLE, Secretary & Manager.
Sept. 14th, 1934.

MONKWEARMOUTH AND SOUTHWICK HOSPITAL, SUNDERLAND.

Applications are invited for the position of HOUSE SURGEONS (there are two). Salary from £120 to £150 per annum according to experience and ability, with board and attendance. Duty to commence October 1st. The appointment is for six months, with option of re-engagement for further six months.

The hospital is an entirely new one, equipped with all modern apparatus.

The post offers exceptional opportunity to enthusiastic candidates.

Applications, stating age, nationality, and previous experience, together with copies of testimonials, should be forwarded to the Secretary, not later than Thursday, September 20th.

THE GORDON HOSPITAL, Vauxhall Bridge Road, London, S.W.1. (35 Beds.)

A RESIDENT HOUSE SURGEON is required at the above Hospital. The appointment is for six months, with salary at the rate of £100 per annum, with board, residence, and laundry. Candidates are desired to send applications and full particulars as to age, qualifications, and experience, together with copies of three recent testimonials to the undersigned, not later than Wednesday, September 19th. Duties to commence on or about October 1st.

HUBERT F. REW, Secretary.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.
(54 Beds. 14,500 Out-patients per annum.)

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for six months from October 1st. Salary at the rate of £100 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester.

JOHN NALL, Secretary.

THE WILLESDEN GENERAL HOSPITAL, Harlesden Road, N.W.10.

Applications are invited from fully qualified and registered candidates (unmarried) for the appointment of a Resident Officer, to hold the appointment of CASUALTY OFFICER for a period of three months from October 1st, followed by a six months' appointment as HOUSE PHYSICIAN. (Total nine months.)

Salary at the rate of £100 per annum.

Applications to be received by the Secretary not later than first post on Monday, September 24th.

September 1st, 1934.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL (Incorporated by Royal Charter), Broad Street, Holborn, London, W.C.2.

A REGISTRAR is required to commence duty on November 1st. Salary at the rate of £150 per annum for attendance on three afternoons a week. Candidates must have had considerable ophthalmic experience, and should send in applications, accompanied by copies of three testimonials, to the Secretary on or before September 29th.

NOTE.—Intending candidates are requested to call upon the Staff of the Hospital, a list of whom can be obtained from the General Office.

IMMEDIATE VACANCY ON RESIDENT Staff for Male Officer as PATHOLOGICAL ASSISTANT at ROYAL BERKSHIRE HOSPITAL, READING, to reside at and also have charge of 63 beds at branch Hospital of Recovery.

Appointment for six or twelve months.

Candidates must be fully qualified and registered.

Remuneration at rate of £125 p.a., with board, residence, and laundry.

Applications, stating age and experience, with copies of testimonials, to be sent at once to the undersigned.

F. A. LYON, Secretary.

LEIGH INFIRMARY, LANCASHIRE.

Wanted, a RESIDENT HOUSE SURGEON, male, single, for Hospital of 85 beds. Salary £175, with rooms, fire, attendance, and board. Good quarters. The position is vacant on September 30th.

The appointment is for six months with eligibility for re-election. Must be good Anaesthetist. The appointment offers exceptional opportunities for surgery.

Applications to be addressed to Mr. J. A. SMITH, Secretary, 3, Silk Street, Leigh, Lancashire.

WESTMORLAND SANATORIUM, NEAR GRANGE-OVER-SANDS. (150 Beds.)

Applications for the post of HOUSE PHYSICIAN for a period of six months, are invited for the above Sanatorium. Salary £250 per annum, with board, lodging, and laundry. Previous Sanatorium experience will be an additional qualification. Applications, giving all necessary particulars along with copies of not more than three testimonials, should reach me not later than September 19th.

J. MUNRO CAMPBELL.
Medical Superintendent.

ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS, MARGATE. (320 Beds.)

Applications are invited for the post of VISITING SURGEON for Ear, Nose, and Throat cases at this Hospital.

An honorarium of twenty-five guineas per annum, plus first-class railway fares is offered. The appointment is subject to the laws and rules of the Hospital. Applications accompanied by one testimonial should reach the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, W.C.2, on or before the Sept. 24th.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.1.

Applications are invited for the post of HOUSE SURGEON for a period of six months commencing on November 1st next. Salary at the rate of £100 per annum, with board, lodging, and laundry. Previous experience as House Surgeon essential.

Applications, accompanied by copies only of three testimonials, must reach the Secretary at the Hospital on or before Saturday noon, September 22nd.

G. H. HAWKINS, Secretary.

SWANSEA GENERAL AND EYE HOSPITAL. (316 Beds.)

CASUALTY OFFICER required. Gentleman, single, must have had previous hospital experience. Appointment for six months, duties to commence immediately. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, qualifications, and experience, together with copies of three recent testimonials, to be forwarded to the undersigned.

O. C. HOWELLS, Secretary-Supt.

BRISTOL ROYAL INFIRMARY.

Applications are invited for the post of ASSISTANT to the Cancer Research Department. Salary at the rate of £300 per annum. Candidates must be qualified and some pathological experience is desirable. Applications, stating age and accompanied by copies of not more than three testimonials, to be sent to the undersigned.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

MARGATE AND DISTRICT GENERAL HOSPITAL. (98 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER, (male).

Salary £150 per annum, with board and laundry. Duties to commence at earliest possible date.

Applications, accompanied by copies of testimonials, should be addressed to the Secretary at the Hospital as early as possible.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, BRIGHTON. (100 Beds.)

HOUSE PHYSICIAN (male) required. Salary at the rate of £100 per annum, with board, lodging, and laundry. No canvassing allowed. To commence duties on September 30th.

Applications, in writing, accompanied by testimonials, should be sent to PERCY F. SPOONER, Secretary, Dyke Road, Brighton.

September 5th, 1934.

LIVERPOOL AND DISTRICT HOSPITAL FOR DISEASES OF THE HEART.

HOUSE PHYSICIAN required for period of six months from October 1st. Salary at the rate of £100 per annum, with board, residence, and laundry. Applications to Miss LEWIS, Secretary, 14, Cook Street, Liverpool.

APPOINTMENTS.—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	COUNTY COUNCIL OF KINCARDINE. *(Deputy Medical Officer of Health.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.) (Workmen's Medical Scheme.)*	CITY OF SALFORD. *(Resident Obstetric Officer, Hope Hospital.)*
LLANELLY AND DISTRICT WORKMEN'S MEDICAL COMMITTEE. *(All Medical Appointments.)*	**PUBLIC HEALTH**	CITY OF SALFORD EDUCATION COMMITTEE *(Assistant School Medical Officer.)*
LLWYNPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	CAMBRIDGESHIRE COUNTY COUNCIL. *(Medical Officer of Health.)*	CITY OF STOKE-ON-TRENT EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	CORNWALL COUNTY COUNCIL. *(Medical Superintendent—Tehidy Sanatorium, Cornwall.)*	COUNTY BOROUGH OF TYNEMOUTH. *(Assistant Medical Officer of Health—Male.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	KENT COUNTY COUNCIL. *(Assistant Resident Medical Officer, Medway Institution Hospital.)*	**PUBLIC ASSISTANCE**
NEATH AND DISTRICT. *(Medical Aid Association.)*		COUNTY BOROUGH OF BARROW-IN-FURNESS. *(District Medical Officer.)*

(b) Overseas.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec of Division or Branch.	Town or District.	Hon. Sec of Division or Branch.	Town or District.	Hon. Sec of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St., Sydney, N.S.W.	**QUEENSLAND.** *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**WELLINGTON, ZEW ZEALAND** *(Contract Practice Appointments.)*	Dr. G. E. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. J. P. MAJOR (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.			**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, "Shell House," 205, St. George's Terrace, Perth, Western Australia.

September 12th, 1934. By Order of the Council. G. C. ANDERSON, Medical Secretary.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond Street, London, W.C.1.

A HOUSE PHYSICIAN and a HOUSE SURGEON are required on October 14th and 18th respectively.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock, on Monday, October 1st, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, October 3rd, at 5 p.m. precisely.

Forms of application and copies of the Rules may be obtained from the Secretary.

HERBERT F. RUTHERFORD,
August, 1934. Secretary.

THE NOTTINGHAM HOSPITAL FOR WOMEN.

HOUSE SURGEON (Female or Male) required to commence duties on October 31st. Appointment for period of not less than six months. Salary at the rate of £150 per annum, with board, residence, and laundry. Previous hospital experience essential.

Applications, stating age, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the Secretary, Mr. A. L. MORELL, Burton Buildings, Parliament Street, Nottingham, not later than September 19th.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Judd Street, W.C.1.

Applications are invited for the post of ASSISTANT SURGEON to the above Hospital. Candidates must be Fellows of the Royal College of Surgeons (Eng.), or hold the degree of M.S. London in Ophthalmology, and must have held the post of Clinical Assistant for two years at least at a recognised Ophthalmic Hospital.

Applications, with copies of not more than four testimonials, must be received by the Secretary not later than September 28th, and candidates must be prepared to attend at the Hospital on Thursday, Oct. 11th, at 4.30 p.m.

GEORGE WATTS, Secretary.

CITY MENTAL HOSPITAL, NOTTINGHAM.

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (Male), single, preferably with some Post-graduate General Hospital experience. Salary £350 to £450 per annum by four £25 increases, all found, with an additional £50 per annum on obtaining the D.P.M. The Hospital has a well-equipped Laboratory. Application, with fullest particulars, should be sent to the Medical Superintendent forthwith.

BUTE HOSPITAL, LUTON.

HOUSE SURGEON (male) wanted to commence duties on October 1st. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, and experience, together with copies of not more than three recent testimonials, should be sent to the Secretary of the Medical Advisory Committee at the Hospital.

R. E. LINGARD,
Bute Hospital. Secretary.

MANCHESTER ROYAL INFIRMARY.

JUNIOR ASSISTANT MEDICAL OFFICER IN RADIOLOGICAL DEPARTMENT.

The Board of Management invite applications for the above part-time appointment, viz., 9 a.m. to 1 p.m. daily. Applicants must be registered and hold a Medical and Surgical qualification, and the D.M.R.E.

The appointment (non-resident) is for twelve months, renewable for a further period of twelve months, subject to the provisions of the by-laws as to notice. Salary is at the rate of £200 per annum. Applicants must state age and send twelve copies of their application and testimonials to the undersigned by Thursday, September 20th.

B. Order,
R. TINDALE,
For Gen. Supt. & Secretary.

ST. MARY'S HOSPITAL, W.2.

HONORARY MEDICAL AND SURGICAL STAFF.

Applications are invited for the post of PHYSICIAN in charge of the DEPARTMENT FOR DISEASES OF THE SKIN. Candidates for the appointment are requested to forward their applications with copies (not originals) of testimonials (not exceeding six in number) addressed to the House Governor of the Hospital, on or before September 26th.

Candidates must be Fellows or Members of the Royal College of Physicians of England.

The appointment is for five years, at the expiration of which time the holder will be eligible for re-election.

W. PARKES, House Governor.

(Appointments continued on p. 46)

BRITISH MEDICAL JOURNAL
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B.M.A. HOUSE, TAVISTOCK SQUARE, LONDON, W.C.1

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REQUIRED, WELL-QUALIFIED OPHTHALMIC SURGEON, holding hospital appointment to take over consulting rooms adjacent to Harley Street. A remunerative part-time appointment would be transferred to suitable applicant. — Address, No. 4753, B.M.A. House, Tavistock Square, W.C.1.

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ASSISTANCIES.

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WANTED. — ASSISTANTSHIP BY M.B., qualified 8 years, age 32 years, Irish, ex H.S. and H.P. (1 year). Away from Sept. 8th till Sept. 22nd, 1934 (cruise). Experienced 5 yrs. in G.P. Testimonials can be produced if necessary.—Address, No. 5562, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — ASSISTANT, OCTOBER 1ST, single, for large Practice, adjacent to Midland City, newly qualified man preferred. —Address, No. 5622, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—ASSISTANT, OUTDOOR, MALE, single, English, Scotch, or Irish. (County Town, Cheshire). Saloon car for use in Practice. Dispenser kept. Usual bond. Salary according to experience. — Address, No. 5602, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — ASSISTANTSHIP, WITH VIEW to Partnership or Succession (easy terms) by M.B., B.Ch., D.P.H., aged 29, married; ex H.P., H.S., 3 years' experience G.P.—Address, No. 5609, B.M.A. House, Tavistock Sq., W.C.1.

WANTED, A YOUNG MALE INDOOR ASSISTANT for General Practice in Northumberland, and near Newcastle-on-Tyne. Salary £325 p.a. Applicants to state age and nationality, and furnish two recent tests.—No. 5577, B.M.A. House, Tavistock Sq., W.C.1.

WANTED, BY OCTOBER 1ST, ASSISTANT, Outdoor, male, single, for industrial, panel, and private Practice, Yorkshire. Suit recently qualified man. Cyclist. Car allowance if own car. £400 p.a. Usual bond.—Address, No. 5581, B.M.A. House, Tavistock Sq., W.C.1.

WANTED BY L.R.C.P. & S.(ED.), 1933, age 32, single, non-catholic, abstainer. Free October 3rd. Experience panel and private work Midlands. Well received.—Address, No. 5621, B.M.A. House, Tavistock Sq., W.C.1.

WANTED, A YOUNG QUALIFIED ASSISTANT in a colliery and industrial Practice in Carmarthenshire. Must be sober and reliable. Practice is not hard. Dispenser and car provided. Salary £300 and rooms. Usual bond, but there is prospect in a few years of succession.-Address, with full particulars, nationality, etc., No. 5573, B.M.A. House, Tavistock Square, W.C.1.

WANTED, A YOUNG UNMARRIED MALE outdoor ASSISTANT for Colliery Practice near Newcastle-on-Tyne. Salary £400 p.a., furnished house, coals, light, and attendance. Applicants to state age and nationality, and furnish two recent testimonials.—Address, No. 5578, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY. — INDOOR AND Outdoor ASSISTANTS (with and without view to Partnership) and LOCUM TENENTS (male and female) for Town and Country Practices. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

WANTED IMMEDIATELY, MALE ASSISTANT, aged about 30, for a Glamorgan Colliery Practice. Salary £350 per annum, plus car allowance, with furnished rooms and attendance.—Address, No. 5343, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY, MALE, SINGLE, Outdoor ASSISTANT for Glamorgan Colliery Practice. Cottage Hospital. Salary £400 p.a., with rooms and attendance.—Address, No. 5373, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY, MALE, SINGLE, Indoor ASSISTANT for Glamorgan Colliery Practice. Salary £300 p.a., all found, plus £50 car allowance.—Address, No. 5374, B.M.A. House, Tavistock Square, W.C.1.

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WANTED.—MALE ASSISTANT FOR PRACtice in Worcestershire town. Previous experience of general practice unnecessary. Salary £250 per annum, plus board and lodging. — Address, No. 5608, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — MIDDLE OCT., OUTDOOR ASSISTANT, for industrial, panel, and private Practice, Yorkshire. Male, single, English or Scotch, age under 30. Previous experience essential. Cyclist. Usual bond. £300 and all found. — Address, No. 5382, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR MALE ASSISTANT (Industrial Town, near Manchester), salary £450, in large mixed Practice, with increase to suitable man. House available. Previous experience essential. Partnership would be considered after reasonable period. Usual bond.—Address, No. 5575, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—OUTDOOR, MALE ASSISTANT, for panel and private Practice in West of England City. English or Scotch preferred. Commencing salary £360.—Address, No. 5612, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—PART-TIME ASSISTANT TO DO night calls and small amount of work. Live in. Near Central London.—Address, No. 5619, B.M.A. House, Tavistock Square, W.C.1.

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THE PROPRIETOR OF BRITISH PATENT No. 361870, for "Improvements in X-ray Apparatus" is desirous of ENTERING into NEGOTIATIONS with interested parties for the GRANTING of LICENCES thereunder on reasonable terms or for sale of the Patent outright. —Communications please address to Messrs. DICKER, POLLAK & MERCER, Chartered Patent Agents, 20/23, Holborn, London, E.C.1.

THE PROPRIETOR OF BRITISH PATENT No. 361855, for "Improvements in X-ray Apparatus," is desirous of ENTERING into NEGOTIATIONS with interested parties for the GRANTING of LICENCES thereunder on reasonable terms or for sale of the Patent outright. —Communications please address to Messrs. DICKER, POLLAK & MERCER, Chartered Patent Agents, 20/23, Holborn, London, E.C.1.

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APPOINTMENTS.—Contd.

ROYAL NORTHERN HOSPITAL, Holloway, N.7.

An ANAESTHETIST required; must be a registered Medical Practitioner. The appointment is for twelve months, with eligibility for re-election, and is open to qualified Medical Women. Attendance is required on Monday and Friday mornings.
Honorarium £10 10s. per annum.
Applications, with copies of three testimonials, should be sent by the 19th instant to the undersigned, from whom particulars of the appointment may be obtained.
GILBERT G. PANTER, Secretary.

HERTFORD COUNTY HOSPITAL.

Applications are invited for the post of HOUSE SURGEON (Male). Salary £200 per annum, with board, residence, and laundry. The appointment is for six months in the first instance. Commencing October 1st.
Applications, with three recent testimonials, should be sent to the undersigned not later than September 25th.
PERCY G. BROOKS, Secretary.

LOWESTOFT AND NORTH SUFFOLK HOSPITAL.

JUNIOR HOUSE SURGEON (male) required. Salary at the rate of £120 per annum, with board, residence, and laundry. Medical and surgical qualifications required.
Eligible for Senior post at £150 per annum after a period of satisfactory service.
Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

ALTRINCHAM GENERAL HOSPITAL. (100 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). Salary at the rate of £150 per annum, with board, etc., to commence duty as soon as possible, six months' appointment. Applications, stating age, nationality, experience, etc., to be addressed to the undersigned.
E. A. BIDEN, Secretary.

BIRMINGHAM MATERNITY HOSPITAL.

HOUSE SURGEON (man or woman) wanted for six months from November 1st (3 months on District and 3 months in Hospital). Salary to be at the rate of £75 per annum.
Applications, with full particulars and copies of testimonials to be sent not later than September 27th to HUGH C. ASTON, 45, Newhall Street, Birmingham.

THE CHILDREN'S HOSPITAL, BIRMINGHAM.

SURGEON TO OUT-PATIENTS.

A Meeting of the Committee of Election will be held in the Board Room on Monday, October 8th, at 11.45 a.m. for the purpose of electing a Surgeon to Out-patients. Applications are invited for the post.
It is required that candidates shall be Fellows of the Royal College of Surgeons of England, or undertake to become so within twelve months of their election.
The successful candidate will be appointed for a term of three years, and will be eligible for re-election. After six years his honorarium (£40 per annum) will cease, and he will be called Surgeon to the Hospital.
Particulars as to the duties can be obtained on application to the undersigned, to whom applications, accompanied by Diplomas and Certificate of Registration, should be sent by September 29th.
Candidates are prohibited from making a personal canvass, but may send copies of their application and testimonials to the members of the Election Committee, and may call upon any member of the Committee if requested by such member to do so.
HAROLD F. SHRIMPTON,
Sept. 11th, 1934. House Governor.

ROYAL MANCHESTER CHILDREN'S HOSPITAL, PENDLEBURY, near MANCHESTER. (190 Beds)

A RESIDENT SURGICAL OFFICER wanted. Salary £125 per annum, who will be appointed for six months. Duties to commence November 1st. Candidates must be unmarried and duly registered. Previous hospital experience essential. A Fellow of one of the Royal Colleges of Surgeons would receive preference.
Applications, stating age and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Thursday, October 4th. Canvassing, directly or indirectly, may disqualify.
By Order,
W. H. HUMPHRY, Secretary.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.13.

Applications are invited for the posts of RESIDENT and ASSISTANT RESIDENT MEDICAL OFFICERS (vacant November 1st), male or female. The appointments are for six months, and will expire on April 30th next. Board and residence are provided: Salaries at the rate of £175 and £120 per annum respectively, including £5 allowance for laundry. The duties of the R.M.O. are mainly surgical, and those of the A.R.M.O., mainly medical. Personal canvassing not desired. Applications, with copies of three recent testimonials, to be sent to the undersigned not later than October 2nd.
A. ERNEST WILKES, Secretary.

WEST END HOSPITAL FOR NERVOUS DISEASES.
In-patient Department, Gloucester Gate, Regent's Park, N.W.1.

The Committee of Management invites applications from British male candidates for the post of JUNIOR HOUSE PHYSICIAN. Duties to commence October 1st. Salary at the rate of £100 per annum, with board, residence, and laundry. Appointment in the first instance for six months.
Candidates should send their applications, with copies of three recent testimonials, to the undersigned by Friday, September 21st.
J. P. WETENHALL, Secretary.
73, Welbeck Street, W.1.

WIMBLEDON HOSPITAL, Thurstan Road, S.W.20.
(General Hospital—74 Beds.)

RESIDENT MEDICAL OFFICER (Male) required for a period of six months in the first place from October 1st, eligible for re-election. Salary at the rate of £150 per annum, with board, residence, and laundry.
Candidates must possess registered qualifications.
Applications, stating qualifications and experience, together with copies of testimonials, should be sent to the undersigned.
PERCY S. GAUNTLETT, Hon. Sec.

THE SHEFFIELD RADIUM CENTRE.

ASSISTANT MEDICAL OFFICER wanted, for work in connection with Deep X-ray and Radium Treatment. Commencing salary £300 per annum. Applications, stating age, qualifications, and all particulars to be sent to the undersigned forthwith.
JNO. W. BARNES, F.C.I.S.,
Secretary.
The Sheffield Radium Centre,
The Royal Infirmary, Sheffield, 6.
September 11th, 1934.

CITY OF BIRMINGHAM.

PUBLIC HEALTH DEPARTMENT.
TUBERCULOSIS SECTION.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from Resident single registered male Medical Practitioners for the post of Assistant Resident Medical Officer in the Tuberculosis Section of the Public Health Department. The successful candidate will be employed both in a Sanatorium and in a Dispensary.

Candidates should have held a resident General Hospital appointment, or an appointment in some Institution set apart for the treatment of those suffering from Tuberculosis. Experience in the diagnosis and treatment of the non-pulmonary forms of tuberculosis is essential.

The commencing salary will be at the rate of £550 per annum, i.e., £400 cash and emoluments valued at £150, rising to £450 cash plus emoluments.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

The appointment will be subject to the Birmingham Corporation Superannuation Scheme, to the candidate passing a medical examination, and to one month's notice on either side.

Forms of application and a summary of duties may be obtained from and should be returned with three recent testimonials to the Chief Clinical Tuberculosis Officer, 151, Gt. Charles Street, Birmingham, 3, not later than September 29th.

Council House, Birmingham, 1. F. H. C. WILTSHIRE, Town Clerk.

CITY OF BIRMINGHAM.

PUBLIC HEALTH DEPARTMENT.
TUBERCULOSIS SECTION.

SENIOR ASSISTANT MEDICAL OFFICER.

The Public Health Committee invite applications from registered male medical practitioners for the above post, the work to include duties both in the Tuberculosis Dispensary and in a Sanatorium with 325 beds.

Candidates should have had at least three years' experience in the practice of their profession, and should have held since qualifying a resident appointment in a general hospital for not less than six months, and have had special experience in Institutions recognised both for the diagnosis and treatment of tuberculosis.

The commencing salary will be at the rate of £750 per annum inclusive of any emoluments. There may be a house available for the officer, in which case the assessed annual value, rent and rates, will be deducted from the salary; if not, his place of residence must be near the sanatorium and be approved by the Committee. The appointment is subject to the Birmingham Corporation Superannuation Scheme; to the candidate appointed passing a medical examination; and to one month's notice on either side. He will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

Application forms, with a summary of duties, may be obtained from the Chief Clinical Tuberculosis Officer, 151, Great Charles Street, Birmingham, 3, and should be returned to him not later than September 29th.

Council House, Birmingham, 1. F. H. C. WILTSHIRE, Town Clerk.

THE KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered Medical Practitioners for the post (two in number) of HOUSE PHYSICIAN (six months' appointment) at the Glan Ely Hospital, Fairwater, near Cardiff (186 beds for pulmonary and surgical tuberculosis in men, women, and children).

Salary at the rate of £100 per annum, plus maintenance.

Applications, stating age, qualifications, and previous experience, together with copies of three recent testimonials, should reach the undersigned not later than September 20th.

Memorial Offices, Westgate Street, Cardiff. D. A. POWELL, Principal Medical Officer.

THE GENERAL INFIRMARY AT LEEDS.

RADIO-SURGICAL HOUSE SURGEON (male or female). Applications are invited for the above post. Salary £100 per annum, with board, residence, and laundry.

The appointment is for six months, subject to renewal. Candidates must be legally qualified and registered.

Applications, with copies of testimonials, to be sent in at once to the undersigned.

S. CLAYTON FRYERS, House Governor & Secretary.

CITY AND COUNTY OF THE CITY OF CHESTER.

APPOINTMENT OF DEPUTY MEDICAL OFFICER OF HEALTH AND DEPUTY SCHOOL MEDICAL OFFICER.

Applications are invited from duly registered Medical Practitioners of not more than 35 years of age for the above appointment.

Salary in accordance with the scale approved by the British Medical Association, commencing at £500 per annum, and rising by annual increments of £25 to a maximum of £700 per annum, together with a car allowance of £50 per annum. Further particulars of the duties, terms, and conditions of the appointment, and application form, can be obtained from the undersigned.

Applications (to be made on the form provided) are to be endorsed "Deputy Medical Officer of Health," and delivered to the undersigned not later than October 5th.

Canvassing, directly or indirectly, will be a disqualification.

Town Hall, Chester. J. H. DICKSON, Town Clerk.

September 12th, 1934.

COUNTY BOROUGH OF WEST HAM.

PLAISTOW FEVER HOSPITAL.

JUNIOR ASSISTANT MEDICAL OFFICER (Male) required.

Appointment will be for one year. Salary £300 per annum, less abatement in accordance with the resolutions of the Council for the time being in force, which is at present 2½ per cent. on the first £200 and 3¾ per cent. on the remainder, together with residence, board, and laundry. Preference will be given to candidates who have held a Resident appointment in a General Hospital. Good facilities for post-graduate study, such as the D.P.H.

Applications, with copies of three recent testimonials, to be sent to the Medical Superintendent, Plaistow Fever Hospital, London, E.13, not later than September 26th.

WINSLEY SANATORIUM, near BATH.

The Governors invite applications for the appointment of a whole-time ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250, with apartments, board, laundry, etc.

The appointment will be made for a period of twelve months (subject, however, to termination during such period by one calendar month's notice on either side).

Applicants should state age, qualifications, experience, etc., and submit three testimonials by September 20th next.

Winsley Sanatorium, Near Bath. August 23rd, 1934. T. A. W. CARLISLE, Secretary.

BIRKENHEAD GENERAL HOSPITAL. (156 Beds.)

Applications are invited for the position of CASUALTY OFFICER (Male) for the six months commencing October 1st. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, nationality, and qualifications, together with three recent testimonials, to reach the undersigned as early as possible.

W. H. DANIELS, F.C.I.S., Secretary-Superintendent.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, 60, Grove End Rd., N.W.8.

Applications are invited for the post of RESIDENT HOUSE SURGEON (Male). The appointment will be for six months from November 1st. Salary at the rate of £75 per annum, with full board. Applications, together with copies of three testimonials, should reach the undersigned not later than the first post on Friday, September 28th.

F. DUDLEY HOBBS, Secretary.

MERTHYR GENERAL HOSPITAL. (118 Beds.)

HOUSE SURGEON required for a period of six months.

Applications, stating age, nationality, and qualifications, with three recent testimonials (copies only), to be sent to the Hon. Secretary of the Hon. Medical Staff at the above. Salary at the rate of £150 per annum, with board, furnished rooms, and laundry.

Duties to commence at once.

THE ST. HELENS HOSPITAL.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male) to this Hospital at a salary of £150 per annum, plus board, residence, and laundry.

Early application to be sent to the Secretary, accompanied by three recent testimonials, not later than September 18th.

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WANTED BY CAMBRIDGE GRADUATE, AET. 29, PARTNERSHIP if possible, Practice considered. £1,200 up. Country or small Town, with Cottage Hospital. House not too large, rent preferred. Applicant has capital to nearly £5,000.—No. 4391.

WANTED.—PRACTICE OR GOOD PARTNERSHIP. Provincial Town in South Midlands or London Suburb. About £2,500. Applicant is 42, married, and has £4,000 cash ready.—No. 4383.

FOR DISPOSAL.

LANCS.—ABOUT £1,000 P.A., WITH PANEL about 1,000. Visits 4/- up. Mid. £2 2s. up. Well-situated house, 2 recep., 4 bed., surgery, etc., garage, and garden. Rent £75 p.a. Premium 1½ years' purchase or near.—No. 9350.

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LONDON SUBURB, S.W.—ABOUT £400 P.A., increasing. Estab. but 3½ years. Panel not encouraged, but ample scope. Visits 5/- to 21/-. Prem. £200. House, 2 recep., 5 bed., to rent.—No. 9349.

WEST OF ENGLAND.—CATHEDRAL CITY. Nearly £1,100 p.a. and ample scope. Panel refused but scope. Clubs about £250 p.a. Premium £2,000. Good family house and large garden.—No. 9327.

N. WALES TOWN. — OVER £1,100 P.A. No panel. Several appointments. Fees 5/- to 21/-. Prem. 2 yrs.' purchase. Good freehold house in own grounds with cottage.—No. 9348.

LONDON, W.2. — AVERAGE £757, PLUS transferable appointments £132. Non-dispg., no panel, but scope. Fees 5/- to 21/-. Suitable accommodation on inclusive rent. Prem. for practice and appts. £1,400.—No. 9343.

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3. WALES.—Pleasant Country District.—Small PRACTICE, returning £341 last year. Opposition weak. Good house to rent £40 p.a. Premium £350. Good school for boys, cottage hospital, and all sports.
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4. BIRMINGHAM.—(Pleasant Suburb rapidly developing)—Well-established middle-class and Panel PRACTICE. Receipts last year £2,890, and increasing. Panel 1,850. Modern house, 2 reception, 5 beds, garage, etc. 1½ years' purchase for quick sale.
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(In conjunction with the MALE NURSES' ASSOCIATION),

29, York St., Baker St., London, W.1.

Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

NORTHERN BRANCH

BRITISH MEDICAL BUREAU

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION, LIMITED)

33, Cross Street, MANCHESTER

Telephones: {MANCHESTER-BLACKFRIARS 3925. MANCHESTER-RUSHOLME 2549 (Night calls).

Telegrams: "LOCUM, MANCHESTER."

Recommended with every confidence to the profession by the BRITISH MEDICAL ASSOCIATION as a thoroughly trustworthy medium for the transaction of all Medical Agency business.

TRANSFER OF PRACTICES & PARTNERSHIPS.
INTRODUCTION OF RELIABLE ASSISTANTS & LOCUMTENENTS.
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Practices & Partnerships Wanted. **Large List of Bona-fide Purchasers with Ample Capital Available.**

FOR DISPOSAL

Full Particulars free on request.

DERBYSHIRE.—Excellent PRACTICE in attractive Country and Market Town; in present hands 42 years. Average cash receipts £2,499 p.a., including appointments approx. £400 p.a. Panel 1,252. Good house, 3 reception, 8 bedrooms; garage, large garden and tennis court. Cottage Hospital. Premium—Practice—two years' purchase.—No. 605.

LANCS TOWN.—Old-established middle and better working-class PRACTICE convenient for North-West Coast. Cash receipts last year £2,828. Panel 1,850. Nice detached house (in own grounds of ½ acre), 5 bedrooms, 2 reception rooms, garage, and large garden, to rent on lease. Premium, best offer.—No. 606.

NEWCASTLE-ON-TYNE.—PARTNERSHIP in old-established panel and private Practice. Cash receipts over £2,000 p.a. Panel over 2,000. Scope for increase. Incoming Partner may choose own residence. Premium—half share—2 years' purchase.—No. 602.

LANCS TOWN. — Old-established middle and working-class PRACTICE. Cash receipts last year £2,166. Panel 1,776. Scope. Good house (in own grounds), 3 reception, 4 bedrooms, separate surgery accommodation, large garage and garden. Rent £65 p.a. Premium 1½ years' purchase.—No. 604.

YORKSHIRE (North Riding). — PARTNERSHIP in estab. mixed-class Practice. Cash receipts last year over £2,000 p.a., including income from panel and appointments over £1,700. Scope for increase. Good roomy house available. Local Hospital. Premium—half share—1½ years' purchase.—No. 601.

LANCS TOWN.—PARTNERSHIP in sound mixed-class Practice. Cash receipts last year £3,680. Panel over 3,000. Good detached house, 2 reception, 4 bedrooms, garage, and garden. Rent £58 p.a. Premium—half share—2 years' purchase, to include half-share of valuable book debts, drugs, etc:—No. 603.

NR. MANCHESTER. — Middle-class PRACTICE in residential district. Cash receipts over £1,200 p.a. Small select panel. Good house, 3 reception, 6 bedrooms; garage and garden, to rent on lease. Premium 1½ years' purchase.—No. 526

CO. DURHAM.—Old-established unopposed country PRACTICE. Cash receipts last year £877. Panel 573. Good house (with modern conveniences), 2 reception, 4 bedrooms; garage and large garden. Net rent £20 p.a. Vendor retiring. Prem. 1½ yrs.' pur.—No. 593.

NORTH-EAST COAST.—Very old-established middle and working-class PRACTICE. Cash receipts last year £1,388. Panel nearly 1,500. Scope. Good corner house, 2 reception, 5 bedrooms; gar. and small garden. Rent £60 p.a. Prem., best offer.—No. 595.

NORTHERN CITY.—Venereal Diseases PRACTICE. Cash receipts last year £1,747. Fees 10/6 to £3 3s. House to rent at £65 p.a. Premium 1½ years' purchase.—No. 594.

NORTH-WEST COAST.—RADIOLOGICAL PRACTICE. Cash receipts last year £809, including approx. £350 from appointments. Purchaser can choose own residence. Premium £1,275; part by instalments.—No. 588.

CHESHIRE.—Middle and better working-class PRACTICE in residential district near Manchester. Average cash receipts £1,105 p.a. Panel 1,140. Good detached house, 2 reception, 7 bedrooms; garage and garden. Local Hospital. Premium—Practice—2 years' purchase, or near offer.—No. 555.

LEICESTERSHIRE.—Old-established unopposed mixed PRACTICE in pretty country district. Cash receipts last year £828. Panel 800. Scope. Good house available. All kinds of sport. Premium 1½ years' purchase.—No. 596.

NORTH WALES.—Outdoor ASSISTANT wanted with view to Partnership in large Practice in pleasant Country Town. Applicants must be well-qualified and experienced. Knowledge of Welsh language essential. Local Hospital. Salary £500 p.a.—No. A.30.

WE HAVE A LARGE NUMBER OF
PURCHASERS
WAITING FOR
PRACTICES & PARTNERSHIPS
IN TOWN AND COUNTRY WITH
INCOMES from £500 to £6,000 p.a.

Enquiries invited from Prospective Vendors.

LIVERPOOL.—Old-established PRACTICE. Cash receipts £500 p.a. Panel 400. Scope. Good house, 2 reception, 5 bedrooms. Small garden. Rent £60 p.a. Premium £650.—No. 599.

CHESHIRE TOWN, nr. Manchester. — PARTNERSHIP in established middle and working-class Practice in pleasant district. Cash receipts last year £1,580. Panel 1,800. Appointments over £300 p.a. Great scope for increase. Local Hospital. Choice of two houses, with garden and garage. Premium—two fifths share—2 years' purchase.—No. 597.

CO. DURHAM. — Old-established mixed PRACTICE. Average cash receipts £1,264 p.a. Panel 794. Excellent house in prominent position, 2 reception, 5 bedrooms, garage. Premium—Practice—1½ years' purchase.—No. 581.

MANCHESTER.—Old-established mixed-class PRACTICE, averaging over £837 p.a. Panel over 1,000. Scope. Good house, 4 bedrooms; garage and small garden, for sale or may be rented. Premium 1½ years' purchase.—No. 589.

MEDICAL WOMAN'S PRACTICE in Large Seaport Town on the East Coast. Cash receipts last year £500. Panel 1CO. Scope. Good house, 2 reception, 3 bedrooms, professional rooms, and small garden. Premium—Practice—£600.—No. 563.

CUMBERLAND.—Old-established unopposed mixed PRACTICE in country district. Cash receipts over £400 p.a. Panel 300. Great scope for energetic man. Good house, 2 reception, 5 bedrooms; garage and garden. Rent £30 p.a. Vendor retiring. Premium, best offer.—No. 592.

MANCHESTER.—Old-established working-class PRACTICE. Cash receipts approx. £800 p.a. Panel and appointments £500 p.a. Scope. Good house, 2 reception, 3 bedrooms; garage. Rent £50 p.a. on lease. Good introduction. Vendor retiring. Premium, best offer.—No. 546.

WANTED.—ASSISTANTS (with and without view to Partnership) and LOCUMTENENTS (male and female) FOR IMMEDIATE ENGAGEMENTS. Particulars on application.

All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33, CROSS ST., MANCHESTER, 2.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,
Oxford Street, W.1.

Tele. Address: Triform, Wesdo—London.

Telephone: Mayfair {1782 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUM TENENS.

Assistants and Locum Tenens can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Accounts, etc.

Practices and Partnerships for Disposal. Full particulars sent free.

1 LONDON, S.W.—WELL-ESTABLISHED AND VERY COMPACT PRACTICE averaging about £1,050 p.a. in pleasant Suburb. Panel about 1,200. House (3 bedrooms) with garage and garden. There is also another house, both for sale or rent. Considerable scope for increase. Premium £2,000.

2 LONDON, S.E. — OLD-ESTABLISHED CASH AND PANEL PRACTICE doing about £1,050 p.a. close to Charing Cross. Panel 1,260. Corner house in good position to rent. Scope for increase. Premium £1,600.

3 MIDDLESEX. — PARTNERSHIP (AFTER PRELIMINARY Assistantship) in well-established and increasing Practice over £3,000 p.a. in growing district. Panel 3,000 about. Applicant should be English, aged about 28-30, single, and keen on Midwifery and Anaesthetics. One-third share at two years' purchase.

4 W. OF ENGLAND.—PARTNERSHIP (AFTER PRELIMINARY Assistantship) in old-established Practice in important City. Cash receipts average about £2,800 p.a. Panel 2,700. One-third share would be sold to a suitable man at two years' purchase.

5 N. DEVON.—SMALL PRACTICE DOING ABOUT £400 P.A. IN delightful Country District on Coast. Nice house (5 bedrooms) standing in about acre of ground with garage. Locality rapidly growing and offering great scope. Premium for house and Practice £1,750.

6 NEW ZEALAND.—WELL-ESTABLISHED PRACTICE IN SMALL Seaside Town in South Island. Vendor's Bookings for just under seven months, £700. Small Hospital. House contains 9 rooms, waiting room, etc. Large garden, stable, etc. To rent. Premium £1,400.

7 LONDON, S.W.—LOCK-UP PRACTICE IN DENSELY POPULated suburban district doing about £500 p.a. Panel 585. Premises consist of consulting and waiting rooms. Rent £70 p.a. inclusive. Ample scope for increase. Premium £900.

8 KENT.—WELL-ESTABLISHED PRACTICE ABOUT £1,100 P.A. in rapidly growing district about 12 miles from London. Panel over 1,300. Convenient house (4 bedrooms, etc), nice garden and very large garage for sale or rent. Excellent scope as large amount of building going on all round. Premium £2,500.

9 S. COAST.—OLD-ESTABLISHED MIDDLE AND BETTER-CLASS non-dispensing PRACTICE in Residential Town and Seaside Resort. Cash receipts average £3,255 p.a. No panel. Visiting fees 5/- to £1 1s. and £1 11s. 6d. Exceptionally fine house in one of the best parts, containing 7 bed and dressing rooms, etc. Garage and nice garden. Freehold would be sold or rented on lease. Good educational facilities. Premium two years' purchase.

10 S. COAST.—PARTNERSHIP IN OLD-ESTABLISHED PRACTICE about £2,500 p.a. in popular Seaside Resort. Panel 1,400. Visits 2/6 to 10/6. Good house (6 bed and dressing rooms) overlooking sea to rent on lease. Good educational facilities. Excellent golf and other sport. Premium three-eighths share two years' purchase.

11 S.W. OF ENGLAND.—GOOD MIDDLE-CLASS NON-DISPENSING PRACTICE in Seaside Resort. Cash receipts average nearly £750 p.a. No panel, but scope in this direction. Visits 3/6 to 14/6. Nice house (7 bed and dressing rooms) with electric light and hot water system for sale. Sport of all kinds. Plenty of good society and educational facilities. Hospital. Premium one and a half years' purchase.

12 N. CORNWALL.—PARTNERSHIP IN OLD-ESTABLISHED INcreasing Practice averaging over £1,750 p.a. in beautifully situated Market Town. Panel 1,100. Visits 5/- to £1 1s. Good house (4 bedrooms, bathroom, etc.), with garage and small garden to rent. Educational facilities and sport including hunting, fishing, etc. Premium one-half share two years' purchase.

13 HOME COUNTY. — PARTNERSHIP IN GOOD MIXED-CLASS Practice in Town about 35 miles from London. Cash receipts about £3,000 p.a., including about £1,000 from panel. Visits 3/6 to 10/6. Suitable house for sale or rent. Scope for increase. Premium one-third share £2,300.

14 CAPE PROVINCE. — WELL-ESTABLISHED PRACTICE IN small Town in one of the foremost Farming Districts (altitude over 5,300 ft.). Cash receipts year ending June 30, 1934, £1,100. including appointment worth £200. Visiting fees 7/6 in town by day, £1 1s. by night. Country at the rate of 4/- by day, 6/- by night. House contains spacious lounge, 2 bedrooms, bathroom, surgery, etc. Garden and good garage. Price about £1,475. Reasonable premium.

15 SOUTH COAST SEASIDE RESORT.—PARTNERSHIP (AFTER Preliminary Assistantship) in well-established Practice of about £2,800 p.a. in Residential Town. Panel 1,755. Visiting fees 4/6 to 15/-. Suitable accommodation could be obtained. One-third share (after Preliminary Assistantship) at two years' purchase. Cottage Hospital, and scope for Surgery, if desired.

16 SOUTH COAST. — PARTNERSHIP IN WELL-ESTABLISHED Practice of £2,600 p.a. in favourite Seaside Resort. Panel £444. Detached house (5 bedrooms) to rent on lease. Premium two-fifths share £2,350.

17 HOME COUNTIES.—PARTNERSHIP IN OPHTHALMIC PRACtice of £3,868 p.a. in Residential Town, under 10 miles from London. Premium for one-third share two years' purchase.

18 DEATH VACANCY. — OPHTHALMIC PRACTICE OF OVER £3,000 p.a. in an important Town in the South of England. Consultations £3 3s. Operations 15 to 100 gns. Premium for one-half share 2 years' purchase.

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Practices and Partnerships for Disposal (continued).

19 LONDON, N.W.—OLD-ESTABLISHED PRACTICE AVERAGING £800 p.a. in pleasant Suburb. Panel about 850. Semi-detached house (6 bedrooms) with good garden for sale. Scope for increase. Premium £1,500.

20 BRIXTON, S.W.—NUCLEUS OF PRACTICE. CASH RECEIPTS past eleven months about £400. Panel 60. Fees in surgery 2/6 to 7/6. Rent of well-furnished surgery £1 weekly. Premium £260 for quick sale

21 LONDON, E.5.—WELL-ESTABLISHED PRACTICE £380 P.A. Panel 130. Visits 3/6, 5/- (night 10/6). Shop-fronted surgery and flat to let. Premium £350.

22 LONDON, N.W.—OLD-ESTABLISHED PRACTICE IN GOOD residential neighbourhood. Receipts average £1,460 p.a. Panel 1,500. Visits from 3/6 to 5/-. Excellent detached corner residence (7 bed and dressing rooms), with garage and garden for sale. Scope. Premium £3,000.

23 S. OF ENGLAND. — PARTNERSHIP (AFTER PRELIMINARY Assistantship) in old-established Practice in growing district on outskirts of a delightfully situated Country Town. Suitable accommodation can be rented. Applicant should be aged 28-35 with some experience. After Preliminary Assistantship a share worth £700 would be sold at two years' purchase. Good hospital and educational facilities

24 BIRMINGHAM.—OLD-ESTABLISHED PRACTICE AVERAGING £650 p.a. in suburban district. Panel about 800. Visits 2/6 to 7/6, medicine not included. Substantially built house (7 bed and dressing rooms) occupying prominent corner position with garage and small garden for sale. Considerable scope as district is growing. Premium £1,300.

25 LONDON, W.—PARTNERSHIP IN WELL-ESTABLISHED PRACtice between £1,100—£1,200 p.a. in residential area easy reach of West End. Incoming Partner should be aged 30-33. Great scope for panel work. One-half share (£500 p.a., guaranteed) would be sold for £1,000

26 SOUTH COAST. — PARTNERSHIP (AFTER PRELIMINARY Assistantship) in old-established Practice of £3,300 p.a. in favourite Seaside Resort. Panel about 2,000. Visits 3/6 to 10/6, some higher. Suitable house available. Applicant should be 25 to 30 years of age, interested in medicine, have held Resident Hospital appointments, and able to give Anaesthetics. One-third share (after Preliminary Assistantship) at two years' purchase.

27 SURREY.—INCREASING PRACTICE IN DEVELOPING RESIdential District. Income about £530 p.a., including small panel returning £80 p.a. Visits 5/- to 7/6. Very good freehold residence for sale. Great scope for increase. Premium £500.

28 SURREY.—PARTNERSHIP IN SOUND OLD-ESTABLISHED good mixed-class Practice of £2,600 p.a. within 10 miles of London. Several appointments and Panel 325. Visits 5/- upwards. Few 3/6. Very little midwifery. Good corner house (5 bedrooms) with nice garden for sale. Scope for considerable increase. Premium one-half share 2 years' purchase.

29 LONDON, S.E.—WELL-ESTABLISHED PRACTICE OF £1,037 p.a. in growing residential suburban district. Panel over 560. Visits 4/-, 7/6, and upwards. Excellent detached house (4 bedrooms) with garage and half acre of garden to rent. Scope for increase. Premium 2 years' purchase.

30 HOME COUNTIES.—PARTNERSHIP IN OLD-ESTABLISHED PRACTICE in most desirable Residential Country Town easy distance of London. Cash receipts average about £4,000 p.a. including good appointments and panel of about 2,500. Visits 3/6 to 10/6 and up to 15/-. Detached house (5 or 6 bedrooms) with garage and fair-sized garden for sale or rent. Good hospital in town. Incoming partner should be 28-30 years of age and have held h.p. appointment. Premium one-third share 2 years' purchase.

31 S.W. OF ENGLAND.—PRACTICE CARRIED ON BY MEDICAL woman in coast town. Receipts average about £350 p.a. including appointments and small panel. Visiting fees 5/- to 7/-. Suitable house available Premium £350

32 COUNTY TOWN ABOUT 130 MILES FROM LONDON.—VERY old-established middle and upper-class PRACTICE averaging nearly £1,200 p.a. Panel 120. Visiting fees 7/6 to 15/6. Ten-roomed house in good residential part with garage and garden for sale. Scope. Premium £1,750.

33 S.W. OF ENGLAND.—NON-DISPENSING PRACTICE OF £1,965 p.a. in beautifully situated and growing Summer Resort. No panel or appointments. Visits and consultations 7/6, 10/6, and £1 1s. Practically no night work. Modern house (6 bedrooms) pleasantly situated in quiet locality, with one acre garden, for sale. Premium 1½ years' purchase.

34 BIRMINGHAM. — MIXED PRACTICE OF £3,350 P.A. IN rapidly growing suburb. Panel about 1,800. Very nice detached modern residence (5 bedrooms) with garage and small well-kept garden. Excellent scope for increase. Premium 1½ years' purchase.

35 MEDITERRANEAN TOWN.—OLD-ESTABLISHED GOOD-CLASS non-dispensing PRACTICE averaging over £2,000 p.a. Fees chiefly £1 1s. Charmingly situated Flat for sale. Premium—Practice—one year's purchase.

36 LONDON, S.E.—PRACTICE ABOUT £350 P.A. WITHIN 5 miles of Charing Cross. Panel 320. House contains waiting room, surgery, dispensary, 2 bedrooms, etc., rent £63 p.a. Premium £500, or offer.

37 LONDON, E.—SMALL PRACTICE IN POPULOUS AREA. CASH receipts past year £425. Panel 351. Accommodation comprises 4 rooms, kitchen, bathroom, and is rented on lease. Premium 1½ years' purchase.

38 BOURNEMOUTH.—DETACHED CORNER RESIDENCE BUILT by Medical Man and from which general practice has been carried on. The accommodation comprises 2 reception rooms, waiting and consulting rooms, 4 bedrooms, etc. Garage and garden. The freehold would be sold for £1,750. Active building is going on in the district, and there is a good opening.

39 LONDON, N.W.—OLD-ESTABLISHED GOOD MIDDLE-CLASS PRACTICE averaging £627 p.a. in first-rate Residential District. Small panel. Visits 5/-, 7/6 (majority), 10/6, and 21/-. Very little dispensing. Practically no midwifery. Semi-detached house (5 bedrooms) with beautiful garden of quarter of an acre to rent. Premium one and a half years' purchase.

40 SURREY AND HAMPSHIRE BORDER.—OLD-ESTABLISHED PRACTICE over £1,200 p.a. in Residential District. Panel 750. Visits 3/6 to 21/-. Good house (about 5 bedrooms), with electric light, gas, and company's water. Garage and very good garden for sale. Excellent golf. Good society. Premium one and a half years' purchase.

41 CORNISH COAST.—SMALL PRACTICE IN DELIGHTFUL SEAside town worth about £250. No dispensing or panel. House, 3 bedrooms, electric light, gas, and walled-in garden to rent. Premium £250.

42 ESSEX.—NUCLEUS OF PRACTICE WORTH ABOUT £175 p.a., capable of good increase, in populous district. Panel 257. House (4 bedrooms) in main thoroughfare, with garden, for sale or rent. District rapidly growing. Premium £200, to include drugs and part of Surgery furniture.

43 NORTHAMPTONSHIRE. — PARTNERSHIP IN OLD-ESTABlished and increasing Practice averaging £1,718 p.a., in small town. Panel 1,950. Good scope for young energetic man. Premium for one-half share two years' purchase.

44 HOME COUNTY. — PARTNERSHIP IN SOUND OLD-ESTABlished, about £6,500 p.a. in beautifully situated first-rate Country Town. House available which might be obtained on lease. Considerable scope for increase. Incoming Partner should be aged about 30, preferably married, and a physician with some knowledge of Pathology. Commencing share of (approximately) £1,170 p.a. would be sold at two years' purchase.

45 S. MIDLANDS. — PARTNERSHIP IN WELL-ESTABLISHED Practice of nearly £2,400 p.a. in growing Country Town within 40 miles of London. Panel 1,300. Visits 5/6 to 7/6 Suitable house obtainable. Considerable scope for increase. Premium two-fifths share two years' purchase.

46 HERTS. — SMALL PRACTICE IN GROWING COUNTRY District. Income little over £200 p.a. with small panel. Nice freehold corner house (4 bedrooms), garden back and front, for sale. Very good prospects for energetic man. Premium £330.

47 W. OF ENGLAND. — OLD-ESTABLISHED PRACTICE IN County Town. Receipts average over £1,050 p.a., including appointment and clubs worth about £250 p.a. No panel, but Practice might be considerably increased in this direction. Visiting fees 5/- to 10/6 and £1 1s. Pleasantly situated corner residence (8 bedrooms) with garage and fair-sized garden for sale. Very good educational facilities. Building progressing. Premium two years' purchase.

48 INLAND WATERING PLACE AND HEALTH RESORT.—WELLestablished non-dispensing PRACTICE. Receipts last three years averaged about £835 p.a., including a select panel of 280. Fees 5/- to £1 1s. Particularly attractive house with large garden, for sale. Scope. Premium £750.

49 N.W. COAST. — OLD-ESTABLISHED PRACTICE IN RESIdential Town. Cash receipts average about £655 p.a., including good appointments worth about £250. Well-situated house for sale. Good educational facilities for both boys and girls. Premium £850.

"MEDICAL PARTNERSHIPS, TRANSFER, AND ASSISTANTSHIPS" (BARNARD & STOCKER). *Post free* 12s. 6d.

All communications to be addressed to Mr. A. V. STOREY, General Manager.

BOVRIL MEDICAL AGENCY, Ltd.

ALDINE HOUSE,

10-13, BEDFORD STREET, STRAND, LONDON, W.C.2.

Telegrams: BOVMEDICAL, LESQUARE-LONDON. Telephone: TEMPLE BAR 1616 (3 Lines).

Chairman and Managing Director, Dr. J. FIELD HALL.

The commission chargeable in respect of any practice or partnership in Great Britain placed exclusively in the hands of this Agency has been fixed on an exceptionally favourable scale, the maximum chargeable on any transfer being fifty pounds (£50). Full Schedule of Terms and Conditions will be forwarded on application.

Accountancy and legal services furnished by the Agency, where desired, at moderate inclusive charges. No charge is made to Principals for the introduction of Locum Tenens or Assistants.

1. LANCS.—LARGE TOWN.—RESIDENTIAL SUBURB.—Old-established good middle and better working-class PRACTICE held by Vendor for nearly ten years. Average gross cash receipts for last three years £1,320 (last year £1,577). Panel of about 850. Transferable appointments worth £160. Fees 3/6 to 7/6. Very attractive house, with all modern conveniences containing 2 reception, 4 bedrooms, etc. Good professional accommodation. Garage and nice garden. Price for freehold £1,600, part on mortgage. Good golf within easy reach. Excellent schools. Premium 1½ years' purchase.
2. LONDON, S.W.—LOCK-UP SURGERY.—Well-established PRACTICE producing about £500 p.a., including panel of 531. Very good scope for increase. Rent of surgery premises £70 p.a. Prem. £900.
3. OUTLYING EASTERN SUBURB. — PARTNERSHIP. — A one-quarter share is offered in a good-class old-established PRACTICE producing for last 12 months over £3,200, of which £1,830 is from panel. Appointments worth nearly £200 p.a. Suitable house, with 2 reception, 2 bedrooms, etc., at moderate rental. Premium 2 years' pur.
4. ESSEX.—Recently established PRACTICE situated in rapidly developing district and producing about £250 p.a., including panel of 300, and appointment worth about £12 p.a. Fees 2/- to 5/-. Suitable house, with 3 bedrooms. Can be rented at £4 10s. per month. Premium £300.
5. LONDON, S.E. — Recently established middle and working-class PRACTICE, producing for last 12 months £450 p.a. Panel of 226. Appointment worth £30 p.a. Fees from 2/6. Suitable house which can be rented at £70 p.a., part sublet. Premium £650.
6. EASTERN COUNTIES.—COAST TOWN.—Good-class, non-dispensing, non-panel PRACTICE, held by Vendor (who is retiring) for the past 14 years, situated in very attractive residential town with Cottage Hospital. Average gross cash receipts for last 3 years £1,129. Fees 3/6 to 21/-. No midwifery. Suitable house, with 2 reception, 6 bedrooms, etc., consulting room. Electric light. Garage. Small garden. Can be rented on lease at £80 p.a. Excellent sport and good schools. Premium £1,500.
7. LANCS.—LARGE TOWN.—Old-established good middle and working-class PRACTICE offering large scope for increase. Gross cash receipts for past 12 months £1,040. Panel of 240. Fees from 4/-. Suitable house, with 3 reception, 6 bedrooms, etc., good professional accommodation. Garage. Garden. Rent on lease £100 p.a. Premium £1,800, or near offer.
8. MIDDLESEX.—OUTLYING SUBURB.—Recently established PRACTICE producing for last 12 months £600 and offering unlimited scope for increase. Panel of 250. Suitable house, with 6 bedrooms, etc. Price for freehold £1,800, £1,460 on mortgage. Premium £900.
9. LONDON, W.—Recently established PRACTICE producing at the rate of £250 p.a. Panel of 100 to 150 (increasing). Suitable house with garden. Can be rented at £90 p.a. Premium £200.
10. HOME COUNTIES.—PARTNERSHIP.—A one-half share is offered in a very old-established good mixed-class Practice, producing for the last 12 months approximately £4,000. Panel of 1,950. Appointments worth over £200 p.a. Visits 3/6 to 1½ gns. Very nice house, containing 3 reception, 7 bedrooms, etc., consulting room, surgery, and dispensary. Separate entrance. Large garden, with tennis lawn. Electric light. Garage. Can be rented on lease. Sport of all kinds, and very good schools. Premium for share £4,050. Ingoing partner must be over 35 years of age, married and preferably English.
11. MIDDLESEX.—OUTLYING SUBURB NEAR BORDERS OF HERTS.—A one-third share is offered, owing to the retirement of one of two Partners in an old established very sound good middle and working-class Practice offering exceptional prospects of increase. Gross cash receipts for the immediate past 12 months £3,250. Panel of about 1,600. Visits from 3/6. Midwifery from 3 gns., about 20 to 30 cases yearly. Suitable house, with 2 reception, 4 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £1,250, £250 down and balance by arrangement. Ingoing partner will reside in new and rapidly developing district where extensive building operations are in progress. Premium £2,600.
12. YORKS.—HOSPITAL TOWN.—PRACTICE is a well-established middle and working-class one situated in a good town of about 30,000 inhabitants. Average gross cash receipts for the past 12 months £1,755. Panel of 1,075. Appointments worth £150 p.a. Advice and medicine 3/6, visits 3/6 to 10/-, with medicine extra. Midwifery from 3 gns. House is a good one, well situated, containing 2 sitting rooms, 4 bedrooms, etc. Garden of 1 acre. Greenhouse Price for freehold (to include branch surgery) £2,000, of which £1,200 can remain on mortgage. Vendor on staff of hospital. Experience in major surgery an advantage, but not essential. Premium £3,100.
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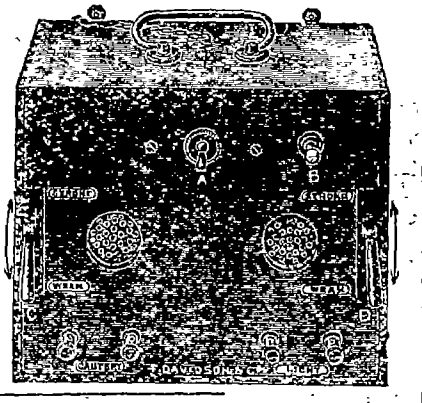

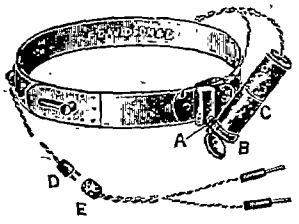

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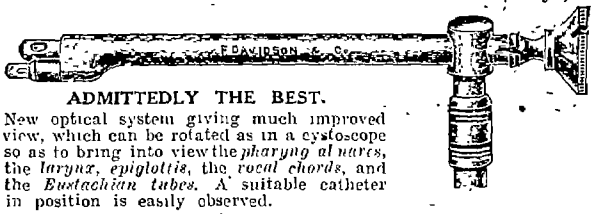

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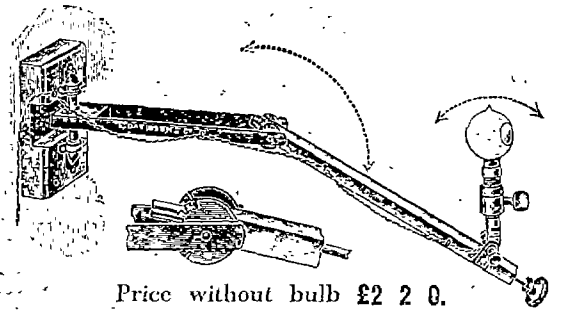

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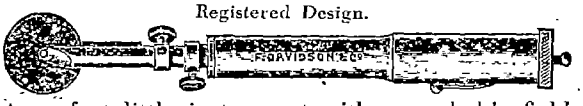

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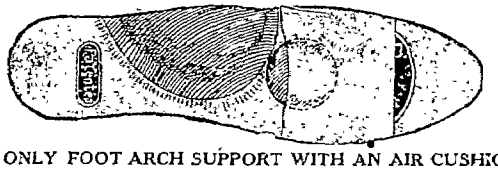

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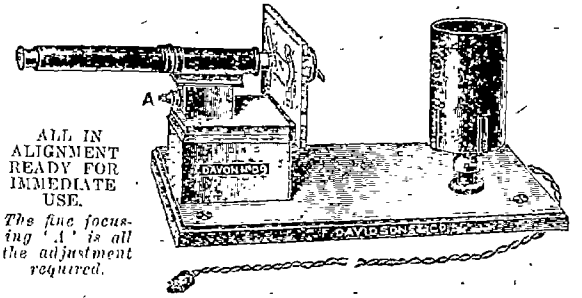

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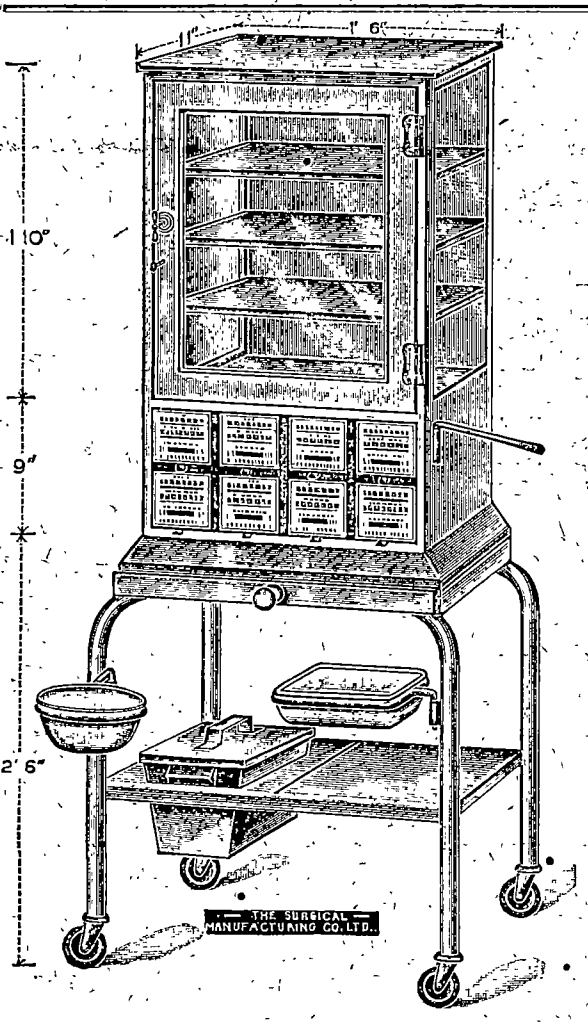

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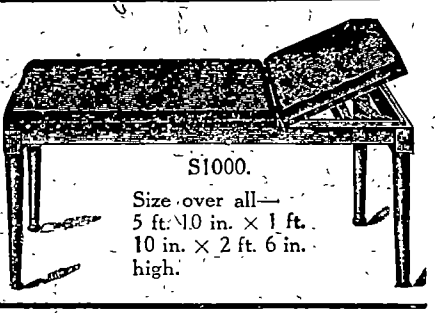

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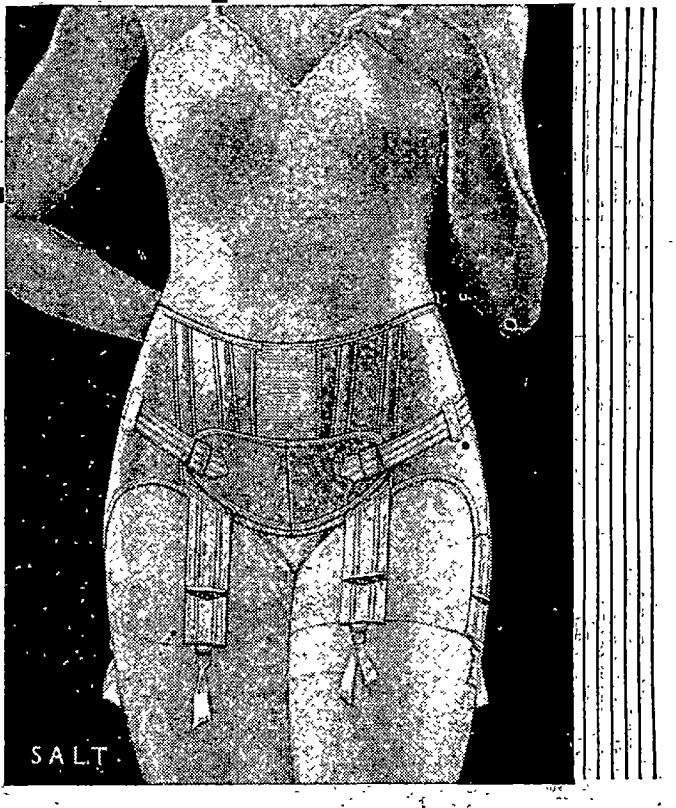

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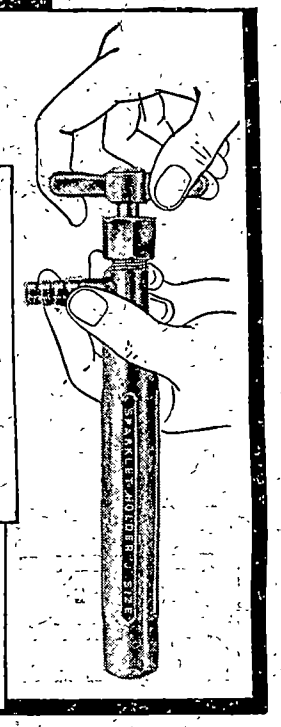

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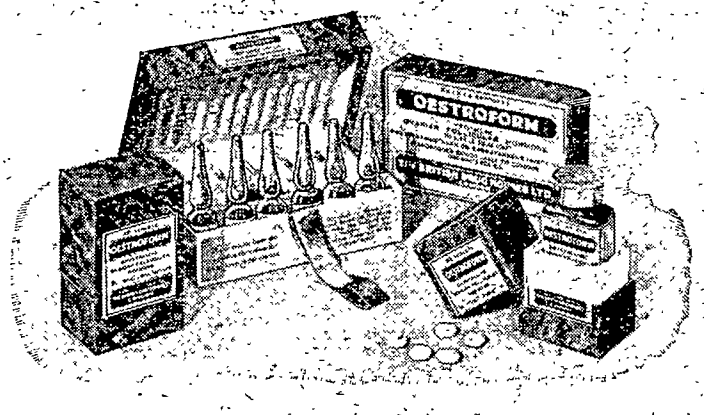

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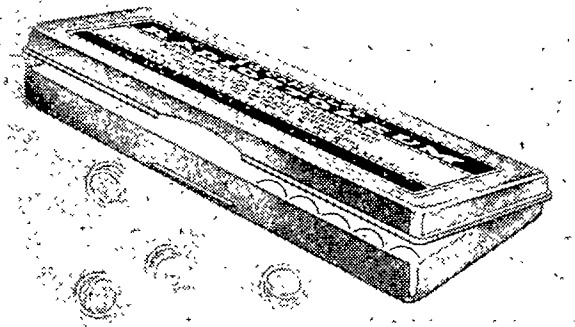

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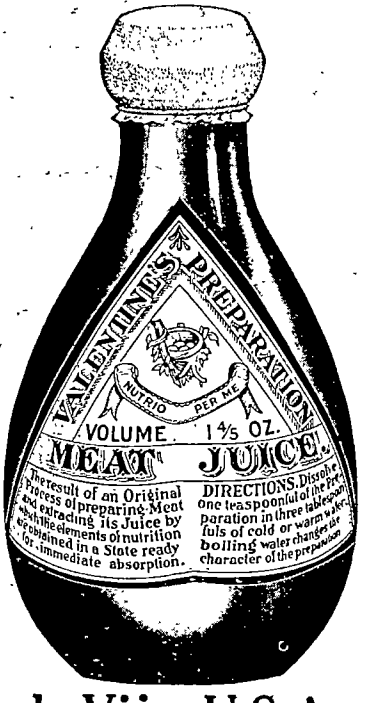

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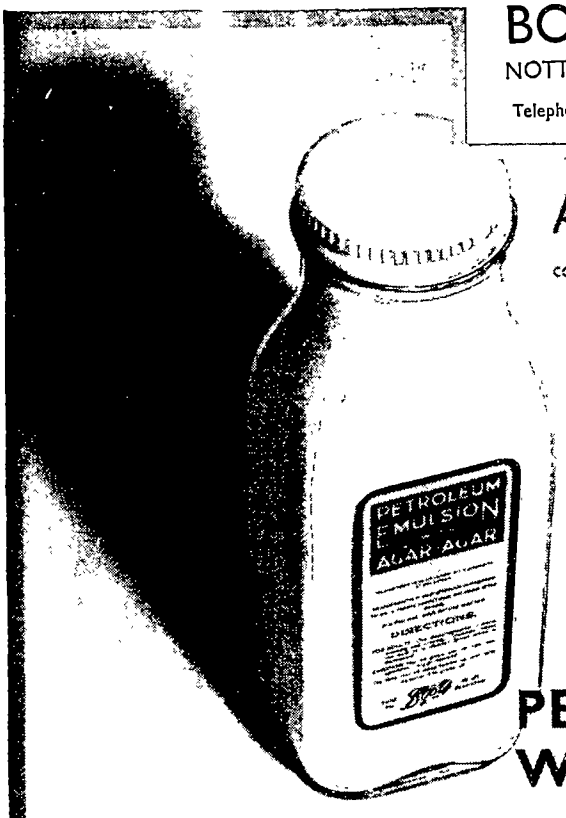

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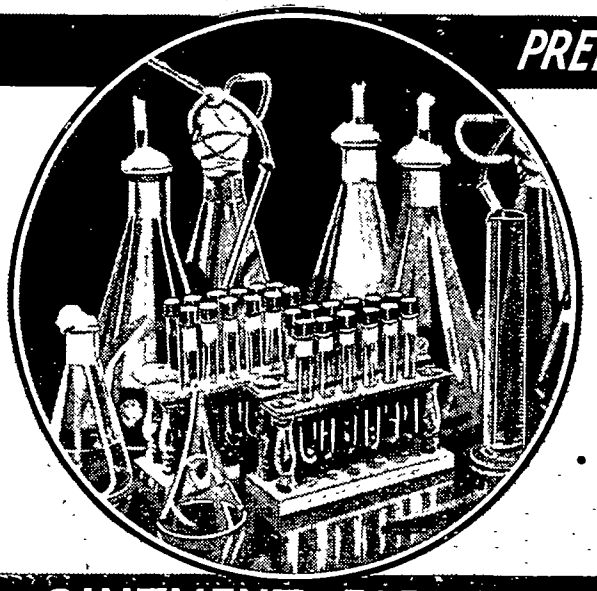

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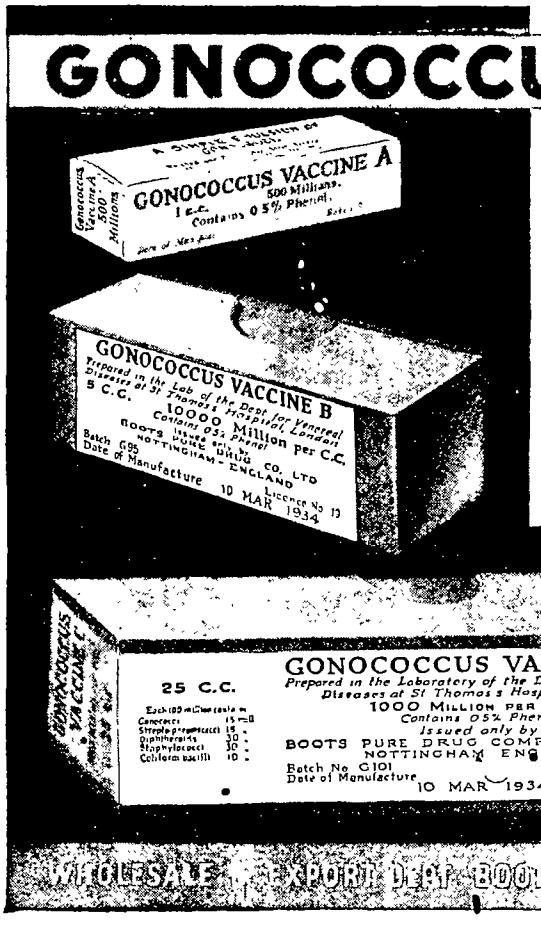

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Med. Annual,	1930	Gonorrhoea.
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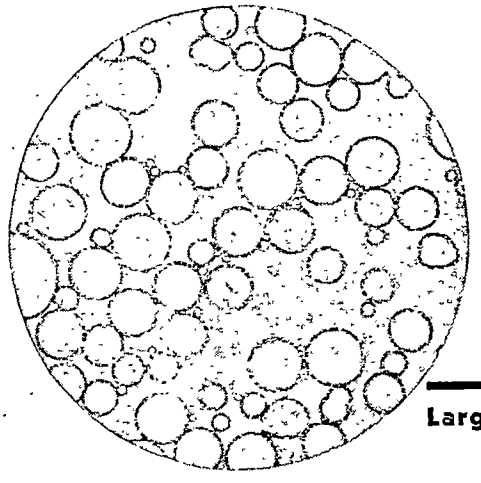

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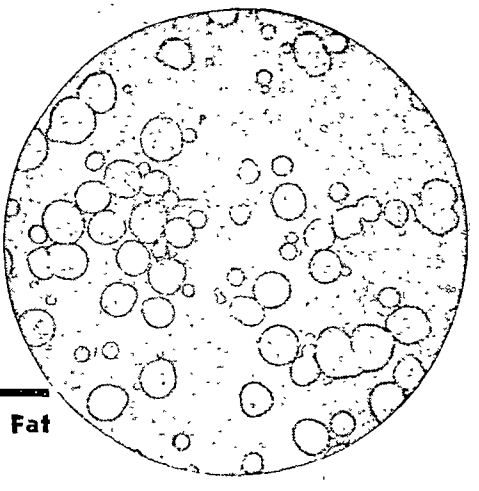

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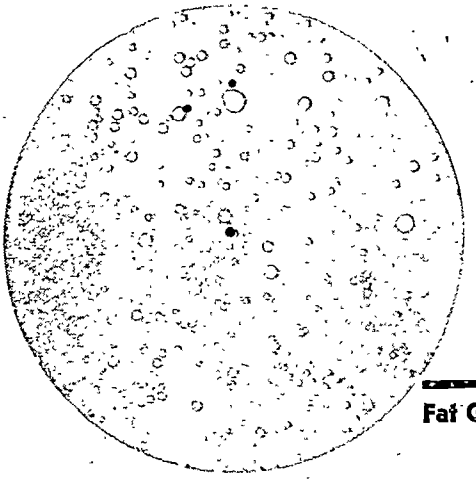

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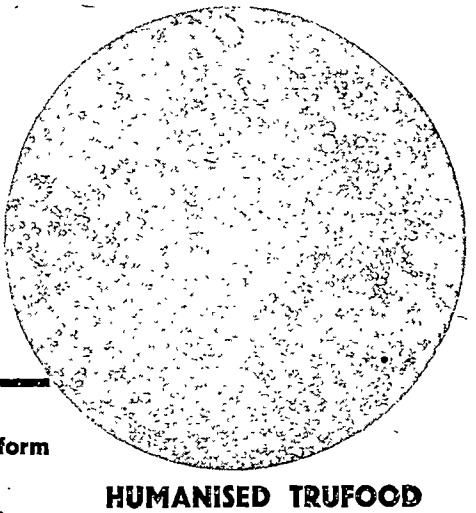

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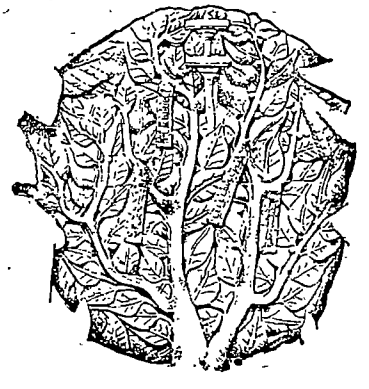
From c. 1300 B.C. The sculpture c. 200 B.C.



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BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, SEPTEMBER 22nd, 1934

ACUTE OSTEOMYELITIS*

BY

JOHN FRASER, M.D., CH.M., F.R.C.S.ED.

HONORARY SURGEON TO THE KING IN SCOTLAND; REGIUS PROFESSOR OF CLINICAL SURGERY, UNIVERSITY OF EDINBURGH

I confess I have found it difficult to decide as to the best method of introducing the discussion of acute osteomyelitis. If I called it an "old friend" I would not be exaggerating, for certainly there is nothing of the parvenu about it, and yet its very familiarity is the subject of disconcerting thoughts, for we must confess that there are many problems relating to this condition which are still unsolved. We may therefore regard this choice of subject as suitable and appropriate.

I feel that it would not serve any purpose to present an outline of the subject on the basis of aetiology, pathology, etc.—these are already fully accepted and established—and I therefore prefer to treat the subject from what I might call a personal point of view, and to recall in what I am afraid may be a haphazard fashion certain of the more problematical, and therefore more interesting features of the disease. I do so in the hope that the discussion (which is, after all, the most fruitful source of enlightenment in a meeting of this kind) may throw some light upon points which to me are brimful of difficulty. Perhaps it is well that I should indicate that what I have to say applies to the acute staphylococcal infection of growing bone.

Incidence of Staphylococcal Osteomyelitis

In recent years it has been said that staphylococcal osteomyelitis is a disappearing disease—a statement with which most of us are in agreement. A statistical survey by Cecil Wakeley, based upon the analysis of hospital cases recorded in the decades 1900–10 and 1920–30, appears to bear out the truth of this statement, and it is held that the lessened incidence is explained by improvement in the general health conditions of the people, and by beneficial changes in the housing and sanitary arrangements. It has been our experience that, while this appreciation is in general correct, there has been, during the past year, a curious increase in the occurrence of the disease. This is borne out by a presentation of the numbers of osteomyelitis cases admitted year by year to one surgical charge in the Edinburgh Royal Infirmary. Over the decade May, 1924, to May, 1934, the figures are as follows:

3, 4, 2, 3, 3, 4, 5, 7, 5, 12 (48 cases).

I agree that it may be merely a coincidence, but I suspect that it may have a more stable explanation. Are the more susceptible individuals of the population entering on a phase of lessened immunity, or is the increase of staphylococcal infection a single example of a state of increased, and it may be increasing, coccal infection? I understand there has been, for example, in the autumn and early winter a definite increase in the incidence of streptococcal infections, particularly of the haemolytic type, ascribable, in the opinion of some, to the unusually dry character of last summer. I wonder if the increase of staphylococcal incidence which we have experienced is attributable to the same influence.

Pathology

The conception of the pathology which is universally accepted is an infection of the marrow area of the bone metaphysis conveyed by the blood stream. No valid reason has ever been advanced in dispute of this view, and all experimental evidence supports its reasoning, but there is one aspect of the pathology which is not so frequently alluded to, and yet I believe that it may hold features of great significance. The haemic theory of staphylococcal osteomyelitis infection adumbrates of necessity a pre-existing staphylococcal septicaemia. I agree that the general infection may be difficult to demonstrate; I appreciate that attempts to exhibit the existence of the organism by blood culture are in the majority of cases without result; but none the less a haemic infection of a bone presupposes that staphylococcal organisms are already circulating in the blood stream, and that their localization in the bone is but a local manifestation of the general disturbance.

To the surgeon the local infection has been the important item in the clinical picture—it is upon this that he has concentrated his ingenuity and his skill; but is it right that we should regard the local focus as a most deplorable and regrettable manifestation? There is such a thing as a fixation abscess; when it appears it is regarded as a providential occurrence, for it is Nature's method of producing a defensive area from which the factors of immunity are organized and developed. From what I have seen of acute osteomyelitis the impression is growing that the focus in the bone, while it creates a difficult and regrettable situation so far as local infection and suppuration are concerned, has certain aspects which can only be regarded as defensive in their action and salutory in their effects. It is obvious that if this conception is accepted the decision will logically follow that we must reorient our attitude towards the treatment and, in fact, towards the clinical progress of the disease.

The degree of severity of the general disturbance in cases of acute osteomyelitis shows considerable variation. In a certain percentage of cases the general infection is so acute that the individual is overwhelmed in the early stages of the disease with the signs and symptoms of an intense general infection, and, as a rule, succumbs before the local evidences are manifest or confirmed. In others the general disturbance is less intense, while the picture is that of a pronounced local inflammatory reaction which quickly passes on to suppuration. If we express this

* Read in opening a discussion in the Section of Paediatrics at the Annual Meeting of the British Medical Association, Bournemouth, 1934.

variation in terms of pathology we may argue that in the first instance the intensity of the general infection has been in large measure dependent upon a deficient local reaction, while in the second instance the antibacterial influences released from the local focus have been efficient in counteracting the more general sepsis. If I may put the matter in a more personal way, I feel infinitely less anxious about the future of the osteomyelitis case when there is a pronounced local bone focus with early suppuration than I am when the local reaction is indefinite and suppuration absent or delayed.

Localization of the Infection

I wonder how many of us have asked ourselves why it should be that the infection of acute osteomyelitis is localized with such a remarkable degree of constancy to the metaphyseal areas of long bones? When the question is raised we are told that the localizing influences are a profuse but rather stagnant blood supply, the tissue activities of rapid growth, and the possibilities of trauma. I do not know that there is much to support any of these arguments, and in regard to the last the bulk of clinical and experimental evidence appears to negative its importance.

I venture to suggest another possible reason. The marrow of all bones, and of long bones in particular, contains a large amount of reticulo-endothelial tissue. During the period of growth, and more especially in those years when the epiphyses are being ossified and the epiphyseal plates are putting forth their greatest effort, there is an immense concentration of reticulo-endothelial cells in the metaphyseal area, where, under the demands of health, they are concerned with various phagocytic functions and the requirements of calcium metabolism. Now there is a growing volume of evidence that in the presence of general body infection the reticulo-endothelial arrangements form one of the most important defensive mechanisms of the body. We find indications of its response in septicaemia, and there are those who believe that when local suppuration appears in relation to the general infection its localization in joints or in the pleurae is an evidence of the reactive activities of reticulo-endothelial tissues.

I know that the argument is difficult to prove, but for myself I have a suspicion that in acute osteomyelitis the bone disturbance is but a local evidence of a general infection, and that the reason why the local infection is so constantly localized to the metaphysis is conceivably because we there encounter a concentration of reticulo-endothelial tissue, and that the local suppuration which results from the defensive activities of the area is in some measure protective against the general disturbance. I anticipate that this thesis will give rise to criticism, and I hope it may stimulate discussion. If space and time allowed, I would elaborate the argument to a fuller degree, but for the present it is sufficient to say that as time goes on I feel that there may be a considerable measure of truth in the theory.

Operative Treatment

It is obvious that, if one believes what I have attempted to define, one's plans of treatment must be considerably influenced by one's views, and so it has been with me. I confess that I am conservative in the matter of operation, and by that I mean that I am an advocate of what has come to be known as the Starr technique in a form which is perhaps even less extensive than that recommended by the one whose name is associated with the method. I confess I am disappointed with the results of the gutter operation, and I regard any attempt at diaphysectomy as utterly wrong in principle and ideal.

Let me describe the procedure as it is actually practised. When the diagnosis is established the infected area is exposed through a suitable incision, and, if the situation permits it, a tourniquet is used. Having exposed the affected metaphysis, the periosteum is separated, and any pus which lies in the subperiosteal area is mopped away. By means of a drill one-eighth of an inch in diameter the cortex of the metaphysis is perforated in a number of places, beginning at a point central to the epiphyseal cartilage and extending along the shaft until healthy marrow is reached. In order to lessen the risk of infecting healthy marrow, a series of drills should be available, and each should be sterilized before each successive use. The ideal is to render the cortex as porous as possible without inflicting undue disturbance upon the parts, and to attain the ideal it may be necessary to drill the cortex at intervals of a quarter of an inch over the entire area related to the infection. Through the puncture points pus and blood exude as the tension of the underlying infection is released.

The wound in the periosteum and the soft tissues is left entirely open, the part being lightly packed with sterile gauze soaked in a solution of liquid paraffin, acraflavine, and potassium citrate.* Each of these substances is understood to fulfil a special purpose—the citrate keeps the discharge in solution and so prevents the bone punctures from becoming blocked, the flavine is of course an antiseptic, which lessens the likelihood of infection spreading into the soft tissues, while the liquid paraffin facilitates subsequent removal of the gauze. Over the packing a copious gauze and wool dressing is applied, and complete immobilization is thereafter secured by encasing the limb in plaster so as to include the related joints above and below the site of the lesion.

The original dressing is kept in place for a fortnight, at the end of which time it becomes uncomfortable, and so it is our practice to remove it under light anaesthesia, to examine the wound, remove any obvious sepsis, and pack the wound afresh. A new plaster casing is applied, and in this instance it may remain *in situ* for a period of a month or six weeks. At the end of that time the wound is again examined, any sequestration which may have occurred is removed, and an attempt is made to close a section of the wound by secondary suture.

Treatment of General Condition

In a favourable case the temperature begins to fall about forty-eight hours after the operation. If on the third day it does not show signs of improvement an antistaphylococcal immuno-blood-transfusion is given, the donor having been prepared by a vaccine injection estimated on a basis of 500 million to 750 million organisms. It is my experience that an ordinary blood transfusion is of virtually no value in correcting the general sepsis, although in late cases when anaemia exists it may be of value. We have given scra what we regard as a very fair trial, using a staphylococcal serum of a polyvalent type, but we have never been satisfied that this had a beneficial effect upon the disease, and, when put to what must be regarded as the acid test—its employment in the most severe cases—it had no appreciable influence upon the progress of the disease. In so far, therefore, as the treatment of the general condition is concerned we rely upon such principles as an abundant supply of fluid, a high vitamin intake in the form of orange juice, and the use of immuno-transfusion in a certain number of cases.

Acute staphylococcal osteomyelitis must always be a serious disease, because it implies a general blood infection and the development of local sepsis in a tissue which

* The solution is acriflavine emulsion 1 in 1,000 with potassium citrate 2 per cent.

for many reasons is intolerant of such disturbance, but we have found that, if we employ a local interference which ensures relief of tension without unduly disturbing the local reaction, the results are often surprisingly good. I have therefore gone upon the principle of regarding acute osteomyelitis as a local infection which is a reaction to a septicaemia. I have viewed the local error as having a certain potential value by increasing resistance to the general infection, and on this assumption we have been satisfied with an operative procedure which ensures relief of tension and as free drainage as is possible without unduly disturbing the local tissue reactions.

Other Operative Procedures

I have abandoned the gutter operation because it did not appear to afford any more efficient drainage than that provided by the method of multiple punctures, while the trauma necessitated by the operation lessened the degree of reaction and encouraged sequestrum formation. In the same way any attempt at curetting the infected marrow encourages an embolic spread of the disease and removes the tissue segments upon which an efficient reaction depends. It has been suggested that, instead of guttering the bone, more efficient drainage might be obtained by removing 3/4 in. of the bone circumference.

As a matter of fact this was attempted in one case, but the result was a sequestration of the remaining segment, with a state of affairs which amounted to an extensive pathological fracture.

The suggestion which has been mooted and in some cases practised, that a metaphysectomy or partial diaphysectomy should be carried out, is to my mind a wrong procedure, and the high mortality which is associated with the operation is probably due to the fact that by this means we remove the actual segment of tissue upon which the patient's resistance to the general infection may well depend. This procedure, if considered at all, should be restricted to late cases in which the entire diaphysis has become necrotic and is lying in a large subperiosteal abscess. In this event the dead shaft is already detached at each metaphyseal extremity, and the operation amounts to nothing more or less than a sequestrectomy.

Results of Operation

I conclude this somewhat disjointed discussion of the disease with a summary of the operation results. In a total of fifty-six cases observed over the last twelve years there have been thirteen deaths, a mortality of 23.2 per cent. In those who succumbed, death was due to a progressive septicaemia which ultimately passed into a pyaemia with secondary abscesses in such varied situations as voluntary muscle and subcutaneous tissue, the heart muscle, the lungs, and the brain.

S. Bueno (*Thèse de Paris*, 1934, No. 606) states that two bodies were responsible for the prophylaxis of malaria in Cuba—the State, which supervises the towns and suburbs, and the sugar companies, which are concerned with the regions in which the sugar cane is cultivated. The areas occupied by small proprietors have hardly any prophylaxis. The campaign undertaken in the towns has caused a complete disappearance of yellow fever and the almost complete eradication of malaria, especially in Havana. Considerable improvement has taken place in the country districts as the result of the measures undertaken by the American sugar companies. The apparent increase in the incidence of malaria during the season in which the sugar is produced is due to the movements of the workmen, a large proportion of whom are infected. The selection of workmen therefore appears to be desirable, only those being taken on who are free from malaria.

FUNGUS INFECTION OF THE FEET:

PROPHYLAXIS AND TREATMENT*

BY

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Fungus infection of the feet has loomed large in the practice of dermatologists during the last twenty years or so, and in no subject in this branch of medicine has investigation been more insistently pursued and more fruitful results obtained. At the same time there are many lines of investigation which remain to be followed, and, until certain further problems are solved, many difficulties as to prophylaxis and treatment will continue.

It is not necessary for me to enter into a description of the fungi which attack the skin of the feet: suffice it to say that a considerable number of different fungi of the hyphomycetes group have been found present in these cases, and also that yeast-like organisms, generally classed under the name "monilia," including the organism of thrush *Monilia albicans*, have also been incriminated. Inflammations of the skin by fungi can take place in two ways: first, by the growth of the fungus in the horny layer and on the horny appendages (the hair and nails), the fungus having been implanted from without on the affected area; or secondly, by transmission of the fungus or its toxins from a local site of infection by way of the blood stream to a distant site. In this latter case some sensitization of the epidermal cells appears to be a necessary preliminary to the production of the inflammatory reactions. Reactions of this type are spoken of as "dermatophytids."

Clinical Types

Clinically, fungus disease of the feet may occur in several forms. For the sake of convenience they may be divided into three types, though some dermatologists prefer a more elaborate classification: C. J. White (*Arch. Derm. and Syph.*, April, 1927, xv, 387), for example, describes eleven types.

The types most commonly seen are: (1) the intertriginous, (2) the vesicular, and (3) the hyperkeratotic. It may be noted, however, that various combinations of these types may occur.

Intertriginous Type.—This is by far the most common, and is found between the toes, often only in the fourth interdigital space, and nearly always bilaterally. In more advanced cases other interdigital spaces are involved, as is also the fold beneath the toes. In the mildest cases perhaps only slight scaling is visible in the fourth interdigital spaces; in more chronic cases the skin of the sides of the toes becomes much thickened, appearing as a dirty white layer, owing to a great thickening of the horny layer. This thickening may occasionally become much more marked at one spot, and a so-called "soft corn" may develop. Generally the skin in the web between the toes cracks, and this crack may extend beneath the toes. In the more active cases an eczematous eruption, of either a dry or a moist character, may spread over the dorsum of the toes and anterior part of the foot, and on to the anterior part of the sole. In the most acute cases the lesions may be vesicular or bullous from the start; in fact, Whitfield states that most cases commence in this way, though on this point I am not in entire agreement with him. In this type of case secondary pyogenic infection is liable to occur, and lymphangitis may be an occasional complication. In the intertriginous

* Read in opening a discussion in the Section of Dermatology, at the Annual Meeting of the British Medical Association, Bournemouth, 1934.

cases there is frequently involvement of the toe-nails; this is not always obvious clinically, though in many cases thickening, opacity, and brittleness of the nails may be present, but the fungus can often be found in nails which show little variation from the normal.

Vesicular Type.—In its most typical form this variety is seen as a collection of deep-seated vesicles, from pinhead to a lentil in size, usually occurring in fairly circumscribed groups on the soles of the feet, most commonly on the instep or ball of the foot. There is usually some diffuse redness surrounding the vesicles, and the patch may be sharply circumscribed, and may spread by peripheral extension, or the patch may be less well defined. The vesicles vary from quite a few up to a large number. They usually appear slowly, but sometimes the whole skin of both soles may become covered with vesicles in a few hours. Although in some cases fungus can readily be demonstrated in the scales, in others repeated examinations fail to reveal its presence, and the same applies to similar lesions on the hands. It has been shown without much doubt that some of the cases belong to the group of dermatophytids, and are not direct infections. Many cases which in the old days were called cheiropompholyx or dysidrosis are now known to be fungus infections. It is not possible here to enter into a discussion on the differential diagnosis of other vesicular and pustular eruptions of the feet.

Hyperkeratotic Type.—This form also occurs on the soles as a chronic eczematous condition, associated with much thickening of the horny layer, which is imperfectly formed and therefore liable to fissuring and exfoliation. It is most marked over points of pressure—the ball of the foot and heel. Luckily it is not such a common type as the two preceding ones.

This is a very cursory survey of the great variations which may be seen in fungus infections of the feet, but it will be noted that they are all types of an eczematous reaction, and although some of them are sufficiently typical to enable a clinical diagnosis to be made readily, others require a careful hunt for fungus before a definite diagnosis can be arrived at.

Treatment

I will now turn to consider the main subject of this paper, prophylaxis and treatment, and as the former depends to a great extent on the eradication of the disease from the infected persons I will first deal with the latter.

In order to treat the disease we must realize as completely as possible the conditions with which we are dealing. In the vast majority of cases the fungus lives entirely in the horny layer of the skin and the nails (the hairs do not require consideration in this connexion). It is true that, as I mentioned above, fungus may get into the blood stream and be conveyed to distant sites, but in these cases, for various reasons I need not discuss now, the fungus does not develop at these distant sites, and if the local supply is stopped the distant effect ceases. When fungus attacks thin skin—such as, for example, the thighs, as in tinea cruris (dhobie itch)—the fungus can be killed off in the horny layer with comparative ease by the use of appropriate fungicides, and can be killed off permanently. Recurrence, apart from reinfection, is rare when smooth, thin skin is involved.

It is the experience of everyone, however, that fungus affection of the feet is often difficult to cure and is prone to recur. The difficulty of cure is largely due to the great tendency that the fungus has to produce marked hyperkeratosis, which prevents the active agents from reaching it. Further, it is only in very severe cases that it is possible to prevent the patient walking about; sweating, pressure, and movement cause the disturbance of any applications in use, and also militate against the resolution of inflammatory products. The tendency to reinfection, in my opinion, is due to the frequent involvement of the nails. It is still an open question whether it is possible to cure infected nails, except by their removal, and it would be very difficult to persuade a patient to undergo this form of treatment for what appears to him an extremely trivial condition, one which he may never even have noticed himself.

Application of Antiseptics

The difficulties which have arisen in clearing up some cases have caused dermatologists to try a very large number of different antiseptics in the treatment of these infections, but I think it is more important to lay stress on the method of applying a few known antiseptics, rather than to ring the changes on a number of different substances. My personal experience has been confined to the use of relatively few antiseptics, and I propose to confine myself to these, rather than give a list of the various remedies recommended by different observers. One must first note that one is dealing with an eczematous condition, and where the inflammation is very acute strong antiseptics and greasy preparations are not well tolerated. This applies equally to eczematous conditions caused by other micro-organisms.

In the acute bullous and vesicular types I have found the most satisfactory results are obtained by baths of 1 in 4,000 potassium permanganate and moist dressings of the same solution. It is well to prick the larger blebs before treating in this way; it is important to keep such patients off their feet, and the permanganate dressings are applied in the same way as lead lotion is applied to acute eczematous conditions—namely, without oil-silk—the lotion being applied frequently, say every hour or half-hour, and free evaporation being permitted. When the acute phase has quieted down the baths should be continued night and morning, but linimentum calaminae, with 2 per cent. ichthyol added, may be substituted for the permanganate dressings. This is applied on lint, each toe being tied up separately, and the dressings changed only twice daily. When the redness has subsided and a dry scaly condition remains then Whitfield's ointment—which is made up as follows: ac. salicyl. grains 15; ac. benzoic., grains 25; paraff. moll. ʒ2; ol. lavand. ɱ4; coco-nut oil ad ʒ1 (in summer white wax may be substituted for the soft paraffin)—should be cautiously applied. It is rubbed in gently once daily, and the permanganate baths continued once daily. If any irritation is produced a return to the ichthyol should be made, and after an interval Whitfield's ointment should be tried again and continued until all scaling has ceased.

This treatment should suffice to cure a case, provided the nails are not affected. In all acute cases the horny layer exfoliates, so the difficulty of penetration of the antiseptic does not arise. Two objections have been raised to reliance on Whitfield's ointment in the treatment of fungus affections of the feet; the first is that it is not a sufficiently good fungicide. This, I think, is disproved by those who have had much experience of it clinically, but it has also been found experimentally by Gould and Carter (*Archives of Dermatology and Syphilogy*, August, 1930, p. 325, and February, 1932, p. 348) to be strongly fungistatic for three of the common fungi found on the feet. The second objection is to the use of an ointment. In the chronic cases localized to the interdigital spaces there may be some force in the argument, though from clinical experience I do not think there is much in it, but for diffuse subsiding eczematoid ringworms of the feet I am convinced that an ointment is superior to any lotion, as the latter produces uncomfortable cracking of the skin, which may delay recovery, and I doubt if penetration is so good. For dry eczematous cases affecting the feet the

treatment is the same as above, but the first stage—namely, permanganate dressings—can usually be omitted. When there is much diffuse hyperkeratosis of the soles associated with a good deal of underlying inflammation again the same line of treatment is adopted, but at a suitable stage small doses of *x* rays (one-quarter to one-third B given weekly for three or four doses) can be added. In some cases the use of salicylic plaster is indicated.

Localized Infections

I have referred above chiefly to the more diffuse types of eruption affecting extensive areas of the feet. We will now consider the more localized types. For superficial intertriginous cases, those with only slight scaling limited to the interdigital spaces and the groove beneath the toes, Whitfield's ointment again appears to me quite a suitable remedy. Here, however, it is well to continue the treatment for some months, even though no trace of the disease is visible. I usually also order a daily foot-bath of permanganate. Whitfield's ointment, owing to the salicylic acid which it contains, and to the keratolytic properties of which it partly owes its efficacy, tends to keep up the sodden appearance of the skin. I have therefore been in the habit of ordering a bland powder, usually one part of boric acid to seven parts of talc, and have told the patient to use this alternately with the ointment—usually alternate fortnights—but this depends rather on the condition when first seen. The treatment must be carried on for two to three months after the disappearance of all scaling. When there is much horny thickening it is first necessary to deal with this. I have found daily painting with salicylic acid spirit (1 drachm to 1 ounce), followed by friction with lint, or even pumice stone, effective.

Each day before the next application the foot is soaked in permanganate and as much of the thickened horny layer as possible is rubbed or scraped away. Sabouraud has recommended the use of a barium sulphide depilatory for the same purpose, and this is probably a quicker method. After the skin thickening has been reduced, Whitfield's ointment, either in normal or double strength, is applied as above. I have tried various other preparations—tinct. iodi, chrysarobin, mercurochrome-220 soluble, Castellani's fuchsine paint, and other preparations, but on the whole I am satisfied that Whitfield's ointment, if used conscientiously, is effective and less liable to cause complications than the other drugs. Whatever preparation is used, patience and systematic treatment is necessary to effect a cure. In those cases where a small crop of vesicles develop on the foot I have found painting with Castellani's paint gives good results. The small vesicles should be punctured and the paint applied night and morning. When the lesions are well I recommend three or four weeks' inunction with Whitfield's ointment.

It is important to remember that treatment must not be confined merely to the affected skin, but must be extended to the areas surrounding it. A. Strickler and W. H. McKeever (*Arch. Derm. and Syph.*, April, 1934, p. 526) have shown fungus in the skin from one to two inches beyond the affected areas.

The Nails

The nails furnish us with a further problem. If these show clinical or microscopical evidence of involvement they should be dealt with. So great an authority as R. Sabouraud (*Med. Press and Circ.*, August 30th, 1933, p. 206) maintains that the only cure, when the whole nail is involved, is avulsion, followed by painting the nail-bed with 1 per cent. iodine in alcohol. Softening the nail with liquor potassae and scraping it away, afterwards applying antiseptics to the bed, can be used, but is more troublesome and less effective.

Recurrence

Having cured the clinical condition we still have to face the problem of recurrence. This may be due either to reinfection or to failure to kill the fungus in the skin in the first instance. Unfortunately, it is usually impossible to decide which it is; even the most careful microscopical investigations are not infallible. Knowing, however, how extensive the infection may be, and having carried out as complete a treatment as is possible, it only remains for us to try to prevent reinfection from the patient's footwear. While the patient is under treatment boilable socks should be worn next to the skin, and should be boiled frequently. When the disease is apparently cured it is best to destroy all old socks, and even then a boilable slip should be worn under the sock while any treatment is going on. Boots and shoes present a greater difficulty: if they can also be scrapped so much the better, but economic considerations cannot be entirely ignored. Short of destruction, swabbing out the boots or shoes with 2 per cent. formalin appears to be the most useful method of dealing with them.

By these methods we endeavour to prevent fungus from again becoming lodged on the feet. Can we further strengthen our defence by the use of substances which hinder the growth of fungus on the skin? O. C. Levin and G. H. Silvers (*Arch. Derm. and Syph.*, September, 1932, p. 466) find that the sweat in the fourth interdigital spaces of the feet is less acid than normal, and they believe that this encourages the growth of fungus in this region, admittedly the most common site of infection by fungi on the feet. They find that by dusting between the toes talc powder containing 1 to 2 per cent. salicylic acid the normal acidity of the sweat can be restored. It is no trouble to anyone to dust some powder between the toes each morning, and this appears to be a very useful method of diminishing the liability to reinfection. It should be continued indefinitely.

Prophylaxis

We now turn to consider the question of prophylaxis as applied to the population as a whole. Prophylaxis of foot ringworm presents very great difficulties for several reasons. It is a very common affection. It is difficult to say how common it is, because a large number of sufferers from it are unaware that they have anything wrong. Even those who notice some scaling or cracking between the toes consider it a normal event. It is certainly very common in private practice, and by no means so uncommon in hospital work as one is sometimes led to suppose. Further, even when one has pointed out to patients that they have this infection in a mild form it is exceedingly difficult to induce them to carry out a prolonged treatment for a condition which causes them no inconvenience. It is also a difficult matter, for those of us who treat these cases habitually, to say with any certainty that we have effected a cure with the methods at present available, and so long as any uncertainty on this score exists in the minds of the profession it diminishes its power in demanding protracted treatment from the patient.

Our first object in prophylaxis should be to remove all sources of infection. I have said that we have to face two difficulties: the failure of the public to recognize mild cases, and the difficulty of obtaining a certain cure. As regards the first of these difficulties, I can see no hope of slight cases coming for treatment in our present state of society. It would necessitate compulsory medical examination of the whole population and the education of the medical profession to recognize the condition, a stage which it has not yet reached. Before such a state of affairs has arrived, however, we may hope that dermatologists can offer a more successful and rapid cure of the

condition. Though it may take some time for the millennium to arrive, a great deal might be done, and in some places is being done, to diminish the dissemination of the disease by systematic inspection and treatment. It is well known that the disease is specially liable to spread in communities such as public schools, universities, sanatoria, etc. In these places systematic examination of the feet and treatment might be much more completely carried out than it is at present.

Assuming, therefore, as we must, that there are always a number of infected persons amongst us, we now have to consider how infection of the non-infected can be prevented. It is probable that most fungus infection is picked up by the toes from the floors of bathrooms, swimming baths, changing rooms, etc.—in fact, any place where infected persons may stand with bare feet and so leave scales about. There are two main methods of prophylaxis available: first, by preventing the naked foot from coming into contact with the floor, either by wearing rubber shoes or by having separate bath mats for each person; and, secondly, by using some antiseptic after contact with a possibly infected floor. For hotels and private houses the use of separate towels and bath mats would probably go a long way towards preventing infection, while the employment of rubber shoes in swimming baths might well be made compulsory. In America this question has been studied very carefully by a number of observers.

To quote only one published paper: R. T. Legge, L. Bonar, and H. J. Templeton (*Journal of the American Medical Association*, July 20th, 1929, p. 170), examining the feet of 3,100 entrants to the University of California in one session, found 53.3 per cent. of the men and 15.3 per cent. of the women had foot ringworm. At the end of a year they again examined 1,000 of these men and 997 of the women who had access to the showers, swimming pools, and gymnasiums. Of these, 78.6 per cent. of the men and 17.3 per cent. of the women were found infected. The increase in the case of the men is striking. The authors point out that the women students occupied a gymnasium with every known sanitary device. The women students and attendants were obliged to wear rubber shoes, and in no circumstances were they permitted to walk with bare feet on the floors or runways leading to the swimming pools or gymnasiums. On the other hand, the men occupied an antiquated gymnasium, where, on account of the lack or non-use of bathing shoes, and inferior sanitary facilities, the students constantly walked on their bare feet and became infected.

With regard to the use of antiseptics in public bathing establishments, these have been tried with considerable success in America. W. L. Gould (*Journal of the American Medical Association*, October 18th, 1931, p. 1300) recommends baths of 10 to 15 per cent. sodium thiosulphate solution to be placed in such a way that all users of the baths must walk through them on their way to their dressing rooms. E. D. Osborne and B. S. Hitchcock (ibid., August 13th, 1931, p. 453) and E. D. Osborne, E. D. Putman, and R. J. Rickloff (ibid., November 1st, 1933) in the same way use 1 per cent. sodium hypochlorite. Both claim to have prevented any spread of the disease by these methods. Needless to add, the proper flooring, and cleaning of dormitory floors, bathrooms, swimming baths, etc., adds materially to a reduction in the risks of spreading infection.

Conclusion

To sum up, we are dealing with a very common affection which, though it does not terminate fatally, and therefore appear in the Registrar-General's returns, may cause a good deal of suffering and loss of work. Owing to its insidious onset a great number of cases escape detection, and, even when detected and treated, for various reasons do not get completely cured. We have to face the fact, therefore, that for the present there will be a large number of individuals infecting the floors of our private bathrooms, public bathing places, etc. I have pointed out that a good deal could be done to limit the spread of infection in such places, but in order to get such measures adopted on a large scale the public would have to be educated, and this can only be done through the medical profession, and the profession as a whole is still barely aware that the problem exists. Possibly the solution of the problem really rests with the dermatologist. I find myself very much in agreement with Weidman, who, in a discussion on the subject in America, made the following remarks:

"The hygiene of the problem is so complicated that I doubt whether the difficulty can be met by that route. It is impossible to sterilize all the wearing apparel of the patient; even so, there would still remain the floor coverings in our homes, hotels, shower baths, etc. It seems to me that the real approach to the millennium in the way of treatment is to establish conditions in the intertriginous locations in which the fungi work and mobilize, which will make these locations undesirable to the fungus."

May it not be that in this direction lies the solution of our problem?

MUCO-PURULENT TUBO-TYMPANIC INFECTIONS*

BY

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When the president suggested for this discussion the subject of tubo-tympanic infections I understand he had in mind its limitation to the class of ear case in which we have reason to believe that the anterior part of the tympanum is mainly involved—cases in which the perforation, if any, is present, is demonstrable, is anteriorly placed, and the discharge, if any, is predominantly mucoid or muco-purulent. We have to include also, of course, cases of low-grade infection in which perforation of the membrane does not occur, although from the appearances, the impairment of function, and the auscultatory signs on inflation we are able to presume the presence of secretion in this part of the middle ear. Further, the president suggested that we might include in the category those unsatisfactory cases exhibiting a continued or recurring muco-purulent discharge from the anterior part of the cavity after the radical-mastoid operation.

We are not directly concerned on this occasion with the acute otitis media arising in the course of common colds, influenza, and the exanthemata, nor with chronic otitis media showing more or less destruction of the posterior part of the membrane with perhaps granulations or polypus. The differentiation cannot be very rigid, however, as many cases properly included may have begun as conditions indistinguishable from the cases we are excluding, and may be looked upon as residuals from the latter.

Why should a middle-ear infection spend its energies on the anterior part of the cavity in preference to the posterior, or (as may be the more correct form of the question for some cases) why should the infection of the anterior part of the cavity continue when it has subsided in the posterior part?

* Read in opening a discussion in the Section of Oto-rhino-laryngology at the Annual Meeting of the British Medical Association, Bournemouth, 1934.

Infection by Direct Spread or by Blood Stream

We are probably all agreed that in the great majority of cases infection reaches the tympanum by direct spread along the Eustachian tube, whose mucous membrane is continuous with that of the nasopharynx on the one hand and the middle ear on the other. The fact that otitis media most commonly arises as a complication of influenza or a common cold, or of those of the exanthemata which in their early stages attack the upper respiratory tract, seems to make such a conclusion incontrovertible. It is comparatively seldom that we do not get a history of sore throat or nasal catarrh antedating the onset of the middle-ear signs. In a large group of cases the Eustachian tube serves merely as an avenue of approach, its inflammatory condition passing off as quickly and completely as the nasopharyngitis which was its precursor. The distinguishing point of the group we are considering to-day is that the Eustachian tube remains prominently in the picture.

On the other hand, there seems to be some basis for the view that sometimes the infection in otitis media, and particularly in mastoiditis, may be blood-borne and quite independent of the Eustachian tube. Killian held that infection of the paranasal sinuses in scarlet fever is blood-borne, and if so why not the mastoiditis which is much more common in this disease? The middle-ear complications of typhoid fever, said to occur in 7 per cent. of cases, are likely to be blood-borne, as nasopharyngitis is not a feature of this disease.

Some observers from experimental work on animals have concluded that pneumonia may be a blood-borne infection, and not an extension down the mucosa of the bronchial tree. They found the pneumococci in the blood during the incubation period, but when consolidation had occurred in the lung the organisms were found to have migrated there and the blood stream was free of them. The hypothesis is that when the pneumococcus gains entrance, usually by the pharynx, the alveolar tissue of the lung, for which the toxins of this organism have an affinity, becomes sensitized. At the end of the incubation period the pneumococci migrate to the tissue thus prepared for them. Possibly the same may occur in influenza and the exanthemata, in which diseases we have abundant reason to suppose that the causative organisms have a special predilection for the mucosa of the middle-ear cleft.

A few months ago I had an opportunity of observing more closely than is usually possible the onset of the ear symptoms in an extremely severe epidemic of measles in a preparatory school, and some of the cases were very suggestive of a blood-borne infection. The inflammatory signs appeared first in the posterior-superior part of the membrane, while the lower part retained its lustre, even as far as not to have lost the light reflex. When, after a few hours or, at most, a day or two, the redness extended over the whole membrane, and myringotomy was performed, only a thin serous fluid escaped. The mastoid operation was necessary in most of the cases in which myringotomy was done, and although it was never delayed beyond two or three days, the advanced stage of the mastoid disintegration suggested that the mastoid infection had ante-dated rather than post-dated that of the middle ear. The medical officer of the school, indeed, suggested a blood stream infection of another kind. He went very carefully into the history of all the boys affected, and found that most of those who developed mastoiditis had been contacts of another boy whom he suspected of being a scarlet fever carrier. This boy actually had, during the measles epidemic, a recurrence of suppuration in a mastoid operated upon after scarlet fever eighteen months previously. The theory, in which the medical officer is supported by a distinguished bacteriologist to whom he presented the data, is that these boys contracted a streptococcal mastoiditis from a latent scarlet fever infection when their resistance was lowered by measles.

However, while recording the opinion that in some cases an acute middle-ear or mastoid infection may be blood-borne, I am not suggesting that in this fact we have the distinction between tubo-tympanic infections and those involving the posterior part of the cavity. Probably only a comparatively small number of cases of otitis media can be even suspected of being blood stream infections. The Eustachian tube must be looked upon as the usual pathway of infection.

Why, then, should the infection sometimes confine its energies to the anterior part of the cavity and at other times skip this, or pass lightly over it, and produce a more severe condition, often with bone involvement, in the posterior part?

Variation of Mucosa in the Middle Ear

The variations in the mucous membrane distributed over the walls of the tympanum may provide part of the explanation. In the anterior part of the floor of the cavity and on its anterior wall where the Eustachian tube enters, the lining is of ciliated cylindrical epithelium. Over the promontory it is cuboidal-celled, and over the attic squamous-celled, this type being continued through the aditus into the mastoid antrum and further cells.

We know that particular organismal types show a predilection for one type of epithelium over another, so that the question whether an ear infection is to become a posterior and mastoid infection rather than one confined to the anterior part of the tympanum may depend on the particular organism involved. I have not been able to trace any bacteriological research into the types of organism predominantly found associated with anterior perforations—obviously the flora is likely to be very mixed by the time a case comes under observation—but it is well known that in the acute cases affecting the posterior part of the cavity and going on to mastoid operation, one or other of the many types of streptococcus is most commonly involved. We also know from clinical experience that the streptococcus is much more liable to attack the squamous epithelium of the pharynx than the ciliated epithelium of the nose. We are not surprised, therefore, to find it selecting for attack that part of the middle-ear cleft which is lined by squamous epithelium.

Degree of Virulence of Organism

There is also the question whether the degree of virulence of the organism, whatever its type, may determine the site of its action, or its maximum action, in the middle ear. Influenza varies enormously in its virulence in different epidemics, although presumably the same organism is always involved. In the milder epidemics just as we have fewer sinus suppurations complicating the nasal symptoms, so also in the ear we have the milder anterior type of otitis media predominating over the posterior more severe type. During the winter of 1925–6 we had, in my area, two distinct visitations of this disease, one in December and the other in March. The former was mild, and of the myringotomies I personally performed only 1 in 10 required the mastoid operation. In the later epidemic, which was a severe one in all respects, one-third of the myringotomies were followed by mastoidectomy.

We have the same variations in the virulence of other epidemic diseases. I looked up my old copy of Osler and Macrae's *System of Medicine* of twenty-five years ago and found the ear complications of measles thus described:

"An acute catarrh of the middle ear is not infrequent from extension of the inflammation in the nasopharynx along the Eustachian tube. It may cause earache, slight deafness, or tinnitus. Occasionally the inflammation becomes purulent and the ear drums rupture. Mastoid abscess rarely complicates the middle-ear disease."

If this represents the incidence of ear symptoms in measles in America at that period, the disease in this country at the same time must have been more fruitful of such complications, as a large proportion of the chronic otitis media cases we see among young adults and people of early middle age are stated to date from measles in childhood. Then in still greater contrast we have the recent very severe epidemic which occurred in several parts of this country with an unusually high incidence of mastoid complications. In the small school epidemic I have already referred to the ears were affected in nearly 50 per cent. of cases, and of the affected ears nearly 50 per cent. required the mastoid operation.

There seems, therefore, to be some ground for thinking that the degree of virulence of an infection may determine the question whether one part or another of the tympanum is more likely to be affected.

Changes in the Floor of Middle Ear

There is also the question whether, owing to the dependent position of the floor of the middle ear, changes ulcerative or otherwise may occur in the mucosa, tending to chronicity. An analogy is to be found in the anterior inner angle of the maxillary antrum, where the mucosa is so frequently polypoid and unhealthy to a degree greatly in excess of any changes present in other parts of the cavity.

Professor Nager holds the view that the anterior perforation with mucoid discharge frequently indicates a tuberculous ulceration of the mucosa, and that this is often proved by the history, by von Pirquet's reaction, and by the presence of the scars of broken-down glands.

The Eustachian Tube

Then we have to reckon with the possibility of pathological changes in the Eustachian tube itself, keeping up an infective discharge from it into the middle ear—the so-called tuborrhoea. The Eustachian tube consists of three parts—a short upper end enclosed in a bony canal, a longer lower end in a cartilaginous funnel, and, between, a short isthmus, supported only by fibrous tissue. In this middle part the walls of the tube are in contact except when, by the act of swallowing, air is forced up the tube into the tympanum. Theoretically, after an acute inflammation of the tube, ulceration and consequent adhesions in this area might produce a condition analogous to stricture of the urethra and gleet, and it is possible that some of the rare cases in which inflation of the ear through the tube cannot be achieved may be so explained. What is still more likely to occur is that after an inflammatory condition in the tube has been established for some time the epithelium loses its cilia, as happens in similar circumstances in the nose and nasal sinuses, and this is probably the explanation of the persistence of tuborrhoea in those disappointing cases which resist treatment in every form.

The Nasopharynx

I am strongly of the opinion, however, that most frequently the determining cause of tubo-tympanic infections is not to be found in the particular organism concerned, nor in its degree of virulence, nor yet in any chronic or permanent change in the mucosa of the floor of the middle ear or of the tube, but in some pathological condition beyond the lower limit of the tube. The original cause and, in most cases, the continuing cause of an unhealthy Eustachian tube is to be looked for in its adnexa—the nasopharynx, the nose, or the paranasal sinuses—and it is mainly there we have to direct our attention with a view to the cure and the prevention of the condition we are discussing to-day.

The Question of Adenoids

As far as children are concerned—and the bulk of our cases of tubo-tympanic infections occur in children—sepsis and hypertrophy of the adenoid tissue of the nasopharynx take first place. It might almost be called the Golden Rule of Otology that in every case of ear discharge or catarrhal deafness in children the question of adenoids must be investigated, and yet one is constantly seeing cases in which the rule has been forgotten over a long period of local treatment.

I have described, in a communication read elsewhere, how when I started an aural clinic in connexion with a school medical service eight years ago I had at first to deal with scores of cases which had attended for local treatment of the ears for long periods, sometimes for years, and which cleared up in two weeks or less after removal of adenoids. No doubt everyone present has had a similar experience, and is finding it still repeated, although, happily, in diminishing degree.

The question of the presence or absence of adenoids should be settled in every case—without qualification. It is not sufficient to accept the mother's statement that there is no snoring or mouth breathing. Nor must we be satisfied with an assurance that the tonsils and adenoids have been removed—not even if we have done the operation ourselves. Even if inspection of the pharynx shows that the tonsils have been completely enucleated we have no right to assume, without an adequate view in the mirror, or, failing that, palpation with the finger, that the nasopharynx is equally free from excess of lymphoid tissue. Many operators seem to be more careful about the efficiency of the tonsil part of the operation than about the complete removal of the adenoids, and do not trouble to finish up with the finger after the curette, to make sure that everything has been removed, especially in the region of the Eustachian orifices and the choanal entrances. Apart from this, no one can guarantee that adenoids will not recur even after efficient removal. In the case of the tonsils, if we remove the capsules completely we can promise that they will not grow again, but we can give no such guarantee as regards adenoids, of which we merely scrape away the excrescence. It is true that recurrence after complete removal does not often take place, and that when any considerable mass of adenoids is found after a previous operation, examination of it generally proves it to be virgin tissue which has obviously escaped the curette before. It is not uncommon, however, to find an overgrowth of unhealthy granulations in the adenoid area—and the child with a chronic or recurring ear discharge cannot afford to harbour anything unhealthy in the vicinity of the Eustachian tube.

With a view to the *prevention* of a chronic tubo-tympanic infection it is equally necessary to keep this question of adenoids prominently before us in every case of *acute* otitis media. To embark on the local treatment of an acute ear which has spontaneously ruptured, or to do a myringotomy or mastoid operation where such is indicated, without making sure whether or not the nasopharynx is free from the sepsis or obstruction of adenoid tissue, is not giving our work the best conditions for success.

I have made it a rule for some years that every case of acute mastoiditis admitted to the children's ward must have adenoids removed a week or so after the emergency operation, if any adenoids at all are present. If on examination before the mastoid operation the tonsils are found to be healthy or to have been removed, it is a good plan to palpate the nasopharynx at the close of the mastoid operation. If adenoids are present they can be scraped away there and then without adding

appreciably to the patient's discomfort. If, however, the tonsils also require removal, the combined tonsil and adenoid operation should be done within a week, so that the length of stay in hospital is scarcely prolonged. The same applies to cases admitted for myringotomy—adenoids alone may be removed when the myringotomy is done, or the complete tonsil and adenoid operation is done a week later if the tonsils also require removal. I believe that by this procedure cases of prolonged discharge after the mastoid operation or after myringotomy are reduced to a minimum.

Before leaving the question of adenoids perhaps a word should be said about the part the tonsils may play in keeping up a Eustachian tube catarrh. It is admittedly a very minor role compared with that of adenoid growths, but it is obvious that the proximity is close enough to demand consideration. Unhealthy tonsils must predispose to a nasopharyngitis, and so to the enlargement of adenoids or the growth of granulations where adenoids have already been removed. One generally finds in young people that with imperfectly removed tonsils adenoids or granulations are also present. This may, of course, only mean that the adenoid removal has been as badly done as the tonsillectomy, but it may also mean that recurring inflammation in the tonsil stumps leads to hypertrophy in the upper part of Waldeyer's ring. On the whole, I think on these grounds it is better to remove unhealthy tonsils in tubo-tympanic infections.

Relevant Intranasal Conditions

Let us now consider conditions in the nose itself which may cause or predispose to Eustachian tube infections.

1. *Foreign bodies* may cause a persistent rhinitis. Some time ago I saw a boy of 9 years with a history of recurring otorrhoea since babyhood. Conservative measures seemed to be successful for short periods, and particularly encouraging for a time after the removal of tonsils and adenoids, but recurrence always took place. I found a bead in the middle meatus of one side of the nose, and after its removal the ear quickly dried up. As a boy of 9 is not likely to put a bead in his nose, we presumed that the foreign body had been there as long as the ear discharge had lasted.

2. *Nasal obstruction* interferes with the efficient ventilation of the Eustachian tubes, and so predisposes to tubal catarrh. The most common cause of such obstruction in adults is a deviation or spur of the septum. In addition to blocking the airway, indeed sometimes without much blocking at all, this gives rise to a post-nasal phlegm, which trickles back over the spur and collects in the nasopharynx. The spur or knuckle causes contact of surfaces which should not be in contact, and produces a kind of nasal intertrigo with irritation of the mucous glands. In a case of tubo-tympanic infection the examination of the nose should be conducted with thoroughness. Cocaine and adrenaline should be applied in every case, as the spur is frequently situated far back and not visible to a casual examination without shrinking of the mucosa. We shall, in any case, probably want to test the patency of the Eustachian tube with the catheter, and the preparation with cocaine will not come amiss for that procedure. A septal deformity is so easily corrected that if we conclude that it has a bearing on the case there can be no excuse in most cases for leaving it untreated. Palliative measures are unsatisfactory. The operation can be done with local anaesthesia, with or without a previous medication sufficient to put the patient to sleep. A mucilage of cocaine with adrenaline added is painted carefully over every part of the septum on both sides, and the sphenopalatine ganglion is blocked by the application of a single drop of 90 per cent. cocaine held against the ganglion for one minute on a cotton-wool mop. This should be done just before commencing the operation, when the localizing effect of the adrenaline already applied prevents absorption of the strong solution of cocaine. The operation is then practically bloodless, and if we discard post-operative plugs and merely paint the wound and the septal mucosa with Whitehead's varnish, discomfort is reduced to a minimum.

3. *Nasal polypi*, besides being a frequent cause of nasal obstruction and interfering with the due ventilation of the Eustachian tube in the same way as do septal spurs, have an added danger in so far as they are always associated with some degree of sepsis in the ethmoid or other paranasal cells. The discharge bathing the nasopharynx is therefore more pathogenic than the phlegm associated with septal deformity. In the kind of ear case we are considering nasal polypi should always be removed, and an attempt made to eradicate the sepsis from which they arise.

Sinusitis

Apart from the obstruction caused by polypi, any of the paranasal sinuses may by its being the seat of suppuration—that is, without polypus formation—cause or keep up an infective condition in the Eustachian tube. I have recently given more attention than I had previously done to this relationship, and have found so many cases in which the antrum of Highmore especially was infected, not only in cases of recurring ear discharge, but in acute cases demanding myringotomy, that I have come to the conclusion that no examination of an inflammatory ear, either acute or chronic, is complete unless it includes the most thorough investigation of the nasal sinuses. Transillumination is admittedly unreliable and should be depended upon only if it yields on both sides an equally bright infra-orbital crescent and pupil illumination, and if there is no suggestion of pus or bogginess in the middle meatus. If there is the slightest doubt *x*-ray examination or exploration should be resorted to. I have several times in recent months when called to do a myringotomy on an acute ear found an antrum opaque on transillumination, and have washed out pus from it under general anaesthesia after doing the myringotomy. If, after inserting the trocar, the patient is placed so that the face is turned three-quarters downwards over the edge of the table there is no danger of fluid passing into the trachea. Such acute cases do not properly come into our discussion to-day, but are admissible from the point of view of prevention, as it is extremely likely that a large proportion of them would not clear up after myringotomy, but would drift into the class of tubo-tympanic catarrh if the nasal sinus were left untreated.

Further Points in Treatment

I quite expect that some will disagree with me over this question of treating an infected antrum in an adult or removing adenoids in a child at the same time as the operation for myringotomy. I make no point of it, but I find it works. The essential point is not to miss anything in the nose or nasopharynx which may be either an exciting or a predisposing cause of the ear condition, and to make sure that it is effectively treated in good time so as not to prejudice our direct treatment of the ear. Septal deflections, polypi, and ethmoid or frontal sinus conditions should be treated as soon as the acute condition in the ear has been relieved.

We must not allow ourselves to be hesitant at doing less than restoring the environs of the Eustachian tube to a condition as near to the ideal as surgical measures or other treatment will achieve. We may have prejudices to overcome, as the patient—and sometimes the practitioner—may not appreciate the connexion, but it is our business to educate them. It has taken almost a genera-

tion to teach the public the relation between adenoids and ear suppurations. It may take as long to convince people that anything at all interfering with the proper ventilation or asepsis of the Eustachian orifices is of scarcely less importance.

Special mention should now be made of the less frequent case in which the middle-ear infection is so mild that rupture of the tympanic membrane does not occur and the changes visible in it are not such as seem, judging by the ordinary standards, to demand myringotomy. The subjective signs may be a feeling of fullness or wooliness in the ear with a greater or less degree of deafness, and perhaps crackling noises. Pain is not severe and may be absent altogether. On objective examination the tympanic membrane may be a dull red or only lustreless. Bone conduction may be greater than air conduction, but only if the deafness is of considerable degree. Diagnostic inflation, by the catheter with the aid of the otoscopic tube, is our most reliable guide, and may reveal some blocking of the Eustachian tube and some whistling rales suggestive of moisture in the tube, or finer bubbling rales indicative of fluid in the tympanum, or both kinds of rales may be heard. There is nothing in the condition at first to distinguish it from a mild catarrhal otitis media, such as might pass off in a few days without treatment, but in spite of inhalations and repeated inflation it persists. Probably most of us have occasionally watched these cases for weeks. I think we should intervene earlier—doing a myringotomy under strict aseptic precautions and inflating by the catheter immediately afterwards to expel through the incision the thick mucoid discharge. The patient will, in most cases, be able to continue the expulsion by Valsalva's method. I shall quote only two cases as examples.

H. W., a male aged 57, had had ticking and singing noises in the right ear for one month; the membrane was injected and lustreless, bone conduction was increased, and a whisper was not heard close up. Bubbling noises were heard on inflation, using the otoscope. Inhalations and catheterization were employed for five weeks without appreciable improvement. Myringotomy was then performed, and while he was still under the anaesthetic the Eustachian tube was catheterized. Sticky muco-pus was ejected, and on mopping appeared like a glistening bead on the cotton-wool. The ear was kept clean by boric acid in spirit and the opening remained patent for twelve days, the blow-through sounding dry for a few days before closure. By that time a whisper was heard at 12 inches, but it took two months for complete restoration of hearing. I am of the opinion that had myringotomy been done two or three weeks earlier recovery of hearing would have been more rapid. In this case a marked deflection of the septum was the probable predisposing cause, but in view of his age I did not suggest operation. In this class of case, however, as in the frankly suppurative cases, any abnormal condition in the nose or nasopharynx should be attended to.

The second patient was a female, aged 60. The right ear had been completely deaf for many years, the tuning-fork tests indicating a nerve deafness. Recently the left ear had also become quite deaf, following on a complete blocking of the nose, from what her medical adviser took to be an allergic condition. The membrane was lustreless but not bulging, bone conduction was increased, and a whisper was not heard close up. Both antra were dim on transillumination and yielded copious pus on lavage. Inflation of the left Eustachian tube revealed bubbling after initial blocking was overcome, and the hearing was greatly improved. After lavage had been repeated five times the nasal airways were good and the hearing restored to normal, but the antra still yielded some pus. There could be no question in this case about the connexion between the antral suppuration and the tubo-tympanic catarrh.

It remains to me to refer to the question of tuborrhoea after the radical mastoid operation. Even in the hands of the best operators a certain proportion of operations fail to achieve complete cessation of the discharge, and it is generally the anterior end of the cavity that is at fault. As a rule, on inflation by Valsalva's method, muco-pus appears at the Eustachian tube end, indicating that, despite all our care in curetting or cauterizing, nature has not favoured us with complete atresia of the upper end of the tube. The operation is not a failure, but it may appear to the patient as such. We are satisfied that we have excavated the cells of the danger area and put the patient in a position of safety, but he was probably more concerned about the annoying discharge, and this continues.

In these cases also, may it not sometimes be the other end of the Eustachian tube we have neglected? Every case of chronic otorrhoea should be carefully studied from every point of view before the mastoid operation is undertaken, and if there is anything in the nose or nasopharynx which might interfere with the health of the Eustachian tube correction of this should be included in the scheme of treatment. If the case is not urgent, I begin with the minor conditions while instituting careful intensive local treatment of the ear, and one is quite frequently surprised to find that the mastoid operation is not required although long periods of local treatment have hitherto been unsuccessful, the case thus proving to be mainly a tubo-tympanic infection when it had all the appearances of a chronic mastoiditis. If the discharge does not dry up we go on to the mastoid operation with confidence that everything is in as good train as may be for a satisfactory outcome. In the numerous cases in which pain, pyrexia, or other signs indicate the need for an immediate mastoid operation, the unhealthy condition in the nose or nasopharynx should be rectified as soon as the patient is fit. Here again, as in the cases referred to earlier, the length of stay in hospital is not prolonged if the minor operations are timed to take place about a week after the mastoidectomy.

Concluding Remarks

In conclusion, I do not wish to seem to minimize the importance of the local treatment of the ear—this must be assiduous as long as may be necessary. I favour the dry treatment as a rule, doing intratympanic irrigation or meatal syringing only as often as is required for removal of debris. After each irrigation the middle ear and meatus should be completely dried by successive mops, aided by catheterization or Valsalva's method. The meatus is then filled with dry boric powder or with the powder suspended in spirit. Nor do I belittle the help that some claim to get from intratubal treatment, but I think the centre of gravity lies at the other end of the Eustachian tube, and that the nasopharynx, with its adjacent cavities, should be explored in every case of tubo-tympanic infection.

In its latest publication, *Standard Code of Industrial Hygiene*, the International Labour Office turns its attention to the lot of workers employed in factories, workshops, etc., who, without incurring specific risks, are nevertheless exposed to the dangers resulting from unhygienic working conditions. There are forty-six clauses in the *Code* covering all matters affecting the health of workers in premises at and above ground level, workrooms below ground level, work under shelters, pent-houses, etc., and unhealthy or offensive trades. It is not intended that the *Code* should serve as a standard system of regulations for general adoption, but rather as a guide for those concerned with the health of the industrial worker. The pamphlet may be obtained from the publishers, P. S. King and Son, Ltd., Orchard House, Westminster, S.W.1, price 1s. 6d.

ELECTRO-COAGULATION OF THE PROSTATE

IMMEDIATE AND LATE RESULTS

BY

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Perurethral methods of treating prostatic obstruction, though still in their period of trial, are undoubtedly finding a place in the field of surgical therapeutics. I feel, therefore, that a report on a short series of cases, most of which were operated on over five years ago, is of interest, and particularly so from the point of view of later results. The method of operating used in this series is one that I evolved as a result of experimental work in 1926, and first put into use in February, 1927.

The technique is described in the *British Medical Journal* of December 8th, 1928, and what I am writing now is supplementary to what I then wrote.

Technique

Briefly, the technique entails the use of two instruments (Fig. 1):

1. *The Diathermy Catheter*, with a coudé bend and a small metal tip, which can be activated from a diathermy machine. It is used for filling and emptying the bladder and for coagulating the tissue that is causing obstruction of the vesical orifice. The manipulation of this instrument is controlled by vision through:

2. *The Suprapubic Cystoscope or Prostatoscope.*—This latter instrument is introduced into the bladder by suprapubic puncture. Through it a clear view is obtained in one field and from above of the whole vesical orifice and its surrounding abnormalities (Figs. 2 to 5).

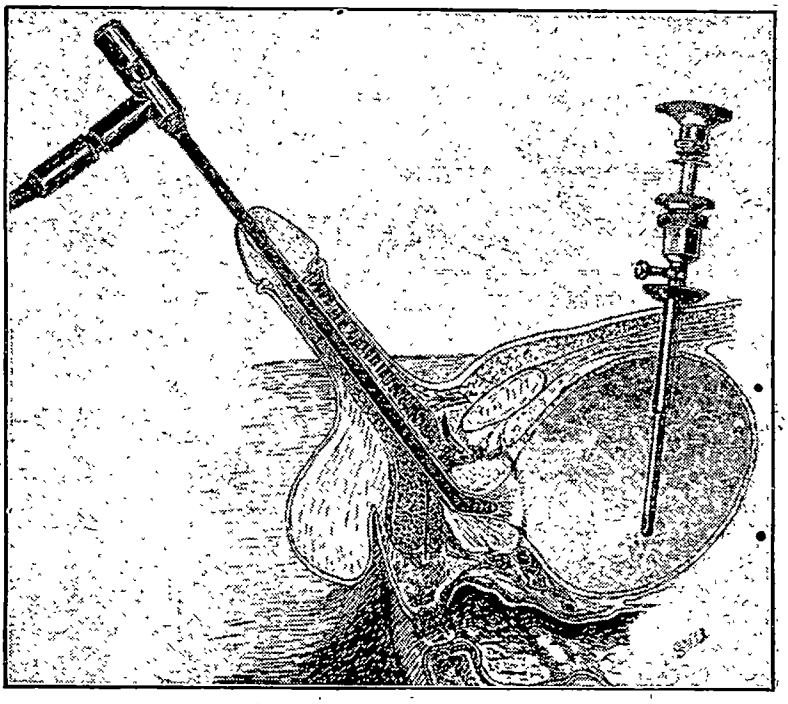

FIG. 1.—The cystoscope should have been shown as entering the bladder nearer the pubic symphysis and in a vertical direction.

By the combined use of these instruments any obstruction that may be encroaching on the vesical orifice can be clearly visualized and coagulated with selective precision. Since the technique was first introduced I have made two modifications:

1. The original diathermy catheter was insulated with a cover of boilable lacquer. This insulation was found to be inadequate. The minutest crack in the lacquer allowed the current to leak and cause a burn of the urethra. I have had two cases of papilloma of the bladder in which the technique described above was being used, where the urethra was burnt in this way—one slight, and the other extensive and serious. The risk of this occurring has now been eliminated by covering the lacquer with a thin metal sheath. This serves the double purpose of protecting the lacquer, and, should a leak occur, the whole length of the instrument becomes warmed, and no damage is caused to the urethra.

2. Before withdrawing the sheath of the suprapubic cystoscope a piece of rubber tubing is passed through it into the bladder for drainage. This is a valuable modification of the technique, for it acts as a safety valve should the catheter become blocked; it lessens the risk of pre-vesical cellulitis; it provides an effective way of irrigating the bladder for as long as is necessary after the operation, and helps very materially to combat the effect of sepsis. The fistula will close in two to four days after the removal of the tube.

Choice of Cases

All cases with undoubted and persistent symptoms of prostatic obstruction, in which on rectal examination the prostate was large, smooth, and movable, and in which the clinical condition and renal functions were satisfactory, have been submitted to suprapubic prostatectomy. The remainder, provided they were not obviously moribund, were treated by electro-coagulation.

It will thus be realized that the technique has been put to a severe test, and this should be taken into account in assessing its value as judged by results. The ages of the patients have varied from 50 to 84 years, and the duration of symptoms from two months to ten years. Frequency was present in all the cases, and eighteen had varying degrees of incontinence. No fewer than twenty-five cases had retention of urine on admission to hospital. This high figure is accounted for by the fact that many of the cases were admitted as emergencies into a Poor Law hospital, where the proportion of such cases is high as compared with those with less acute symptoms.

Physical Examination

The usual general survey of the patient was made. In the selection of suitable cases for electro-coagulation rectal examination is of the utmost importance. Those cases with marked enlargement and prominent bulging into the rectum are best treated by prostatectomy. Cases suitable for electro-coagulation are those where the prostate is only slightly enlarged, those where the enlargement is chiefly in an upward direction, and those in which the prostate is smaller than normal.

In this series twenty-one were noted as being larger than normal, eleven as being smaller than normal, and the remainder normal. Residual urine varied from two ounces to complete retention. Pyuria was present in nineteen cases. The blood urea was estimated in all the cases except seven.

The results are shown in the following table:

Blood urea in mg. per 100 c.cm.	30–39	40–49	50–59	60–69	70–79	80–89	90–99	Over 100
No. of cases	8	5	11	3	2	2	3	1

Perurethral Cystoscopy

Wherever the diagnosis of prostatic obstruction was reasonably clear cystoscopy was not carried out. In the main the cases that did not require this examination were those with definite enlargements and those that had been admitted with retention and had been relieved by catheter. In cases where the symptoms had some atypical features, and where the prostate, on rectal examination, was small, cystoscopy was as a rule carried out. The type of cystoscope used was one allowing of prismatic and direct vision.

A general survey of the bladder and trigone was made. Trabeculation was particularly looked for, and calculus and tumour were excluded. Attention was now directed to the prostate itself, and any gross finding noted. The experimental practice of plotting out a series of cystoscopic fields, and from these making a composite picture, was given up early in the series, for it was found that the information obtained was not worth the trouble it entailed and the extra intraurethral manipulation that the investigation involved. Before withdrawing the sheath of the cystoscope a direct-vision telescope was inserted, and as the instrument was withdrawn the contour of the vesical orifice and the encroachments on the prostatic urethra were noted. These observations were of considerable value in the small or slightly enlarged prostate, and gave definite evidence as to the portion of the vesical rim that was causing the obstruction and required coagulating. I found it impossible to estimate with any degree of accuracy the size of the prostate by perurethral methods, and much more dependable information on this point was obtained by rectal examination and by using the suprapubic cystoscope.

In brief, the value of perurethral cystoscopy and urethroscopy, where this technique is used, is to show that there is no obstruction in the urethra other than in the prostatic portion and at the vesical orifice, to exclude other conditions of the bladder that might account for the symptoms, and to ascertain if there is trabeculation of the bladder as indicating obstruction of the urinary outflow. It may be taken as an axiom that if there is trabeculation of the bladder and no stricture of the urethra, there is obstruction at the vesical orifice, however unconvincing the signs may be from perurethral cystoscopy and examination of the prostate itself.

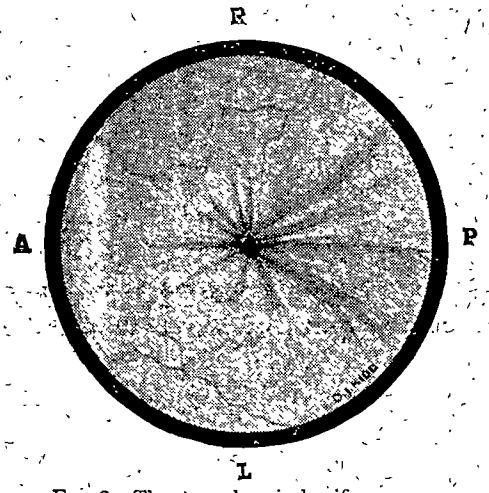

FIG. 2.—The normal vesical orifice.

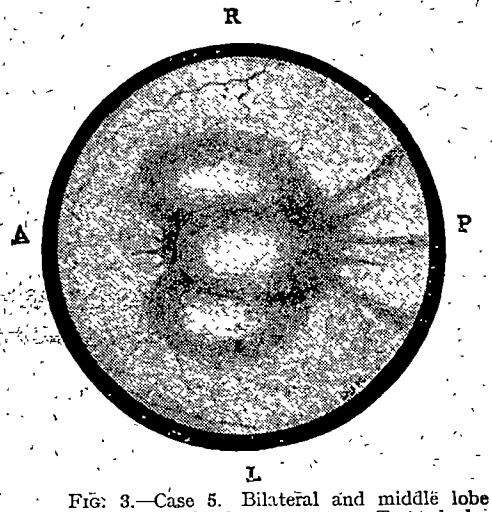

FIG. 3.—Case 5. Bilateral and middle lobe enlargement of the prostate. Treated by electro-coagulation. Normal relief.

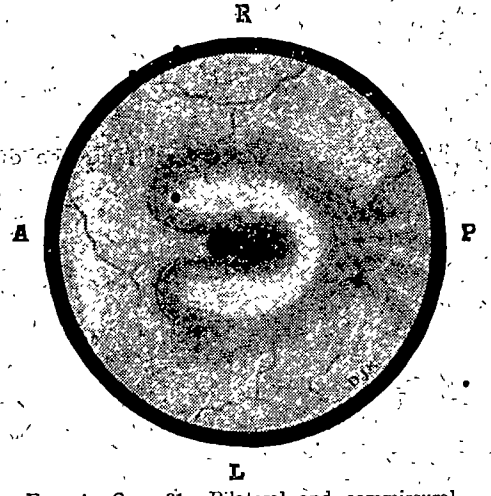

FIG. 4.—Case 31. Bilateral and commissural enlargement. Electro-coagulation. Normal relief.

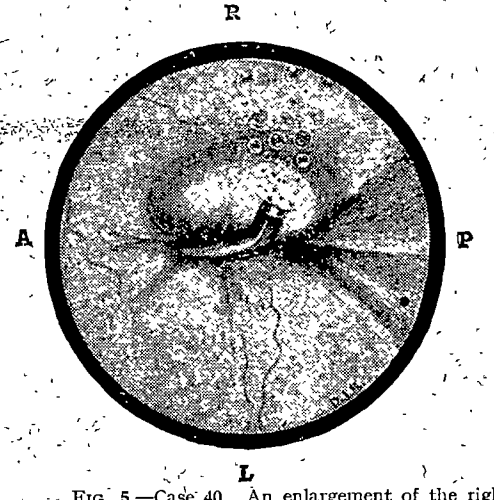

FIG. 5.—Case 40. An enlargement of the right lateral lobe being coagulated. Normal relief.

Immediate Results

The convalescence of these cases has in the main been uneventful and free from anxiety. While the suprapubic drainage tube and the catheter drained the bladder the patients were comparatively comfortable. After these had been removed, and up to the end of the third week after operation, they complained of varying degrees of bladder irritability—frequency, precipitant micturition,

and dysuria. During this period the sloughs are separating, and as a rule they come away in small fragments and are passed per urethram without any difficulty. There has been a remarkable absence of haemorrhage, which is a striking contrast to what occurs in the resection and punch operations. In no case has there been primary haemorrhage. Trivial secondary haemorrhage occurred in three cases; in none of these did it last more than forty-eight hours, and it ceased entirely after the passage of fragments of slough.

Incontinence occurred in six cases. In all of them it was temporary. In one case the cessation of the incontinence coincided with the passage of a medium-sized slough. Inflammation round the vesical orifice and consequent dysuria is to be expected after treatment by per-urethral methods. In ten cases it was more marked than usual, and lasted for varying periods up to three months. Epididymitis occurred four times—bilateral in one and unilateral in three instances. The inflammation cleared up in all cases with expectant treatment. In seven cases large sloughs formed, giving rise either to difficulty in micturition or to temporary retention. In five of these the slough was passed naturally, with great relief to the patient. In one case it was evacuated by means of a Bigelow's evacuator, and in the remaining case it was removed in the jaws of a small lithotrite after being crushed, the procedure being controlled by means of the suprapubic cystoscope.

Prevesical suppuration occurred in two cases. The first was the tenth of the series. The suppuration was extensive, and a suprapubic incision had to be made to evacuate a large quantity of pus. All cases after this one have had a tube inserted into the bladder, and only one case of this complication in a mild form has occurred since.

Remote Results

All the cases that are here reported were operated on during the five years 1927–31. In twenty-nine cases it is more than five years since the operation, and in the remaining thirteen from two to five years. The following table gives an analysis of the results.

Normal relief	50	per cent.
Partial or temporary relief ...	22.2	,, ,,
No relief	11.1	,, ,,
Died...	16.6	,, ,,

Not traced: 6 cases.

For the purpose of this classification "normal relief" means that the patient passes his urine in a good stream, has no frequency and no dribbling, and does not get up to micturate more than once in the night. This is a very high standard of relief, and were it lowered a little the number in this category would be considerably higher.

Partial Relief

In this group six cases derived very considerable relief from the operation, but could not be classified under "normal relief" because frequency, though diminished, was still present. The following two had marked relief for a period, and then the symptoms returned.

Case 32.—Kept well for two years, when symptoms began to return. *X*-ray investigations showed stone in the lower end of the left ureter and a medium-sized stone in the bladder. Three months after return of symptoms the patient was operated on elsewhere. The left ureter was opened and the stone pushed into the bladder, which was then opened, the stones being removed and the prostate enucleated piecemeal with difficulty; the patient died on the fourth day after the operation.

Case 35.—Had marked relief for three years; then his symptoms began to return. Three and a half years after the electro-coagulation a suprapubic prostatectomy was carried out elsewhere. There was no difficulty in enucleating the prostate. The patient died the sixth day after the operation.

Unrelieved Cases

Three examples of this group are given below.

Case 14 was 84 years of age, and in a very feeble condition. Electro-coagulation gave him slight relief, but he returned in fifteen months with retention of urine. No further operation was done, but he improved after being catheterized for a few days. Twelve months later he "died of old age."

Case 16.—Had had frequency and incontinence for ten years before admission. The incontinence continued in spite of two electro-coagulation operations, one eleven months after the other.

Case 34.—Had two friable stones removed by litholapaxy at the same time as the electro-coagulation. He was readmitted twelve months later with a recurrence of symptoms, when prostatectomy was carried out and another stone in the bladder removed. He died three months later.

Causes of Death

There were six deaths in the series.

Case 6.—Was admitted with clinical signs of uraemia. He had a large prostate with bilateral and commissural enlargement. Blood urea, 75 mg. per 100 c.cm. During the fourth week after the operation his blood urea was up to 180 mg. per 100 c.cm., and he died of uraemia. (This was an early case in the series, and my enthusiasm rather warped my judgement. This patient should not have been operated on, as his trouble was too far advanced.)

Case 19.—Ten days after operation this patient passed urine freely and had no residual; could hold urine for five hours. Nine weeks after operation he had repeated attacks of epistaxis, from which he died a week later.

Case 21.—This patient was 80 years of age, and had suffered from diabetes for several years and haematuria for three months. His blood sugar was 333 mg. per 100 c.cm., and his blood urea 52 mg. per 100 c.cm. The blood urea went up to 85 mg. per 100 c.cm. on the seventh day after the operation, and on the eighth day he became comatose and died.

Case 26.—Had marked cystitis at the time of diathermy and twelve small vesical calculi, none of which was larger than a small pea. He died on the third day after operation, and the post-mortem examination showed an ascending pyelonephritis.

Case 28.—Admitted with retention of urine and a history of having had incontinence for six months. A small adenoma growing from the right side and filling the vesical orifice was destroyed. His convalescence was normal. On the eleventh day he was emptying the bladder completely without any difficulty. During the fifth week after the operation he became insane, and had to be transferred to a mental ward, where he subsequently died.

Case 29.—Admitted with chronic myocarditis, cystitis, and incontinence of urine. Electro-coagulation of left lobe was done. He had marked cystitis, which began to improve after the eighth day. It never completely cleared up. His cardiac condition became worse, and he died on the thirty-seventh day after the operation.

These cases illustrate in a striking manner what bad risks many of the patients in this series were. Case 26 was the only death that was directly attributable to the operation. In the light of subsequent experience I do not think this patient was suitable for treatment by this technique. A cystotomy was the only procedure that was feasible in his case. It seems unreasonable to blame the technique for the death of Case 21.

Untraced Cases

The untraced cases call for no comment. The immediate results were no better or no worse than the average, and there is no reason to think that had it been possible to trace them they would have materially affected the statistics.

Summary

1. By means of the technique described above the whole of the vesical orifice and its immediate surroundings can be seen in one field, and any tissue obstructing the orifice can be destroyed with selective precision.

2. The method has been put to a very severe test, inasmuch as all cases that were not suitable, or were in too bad a condition, for suprapubic prostatectomy were, provided they were not moribund, treated by it.

3. The immediate and remote complications and results are described.

4. Normal relief was obtained in 50 per cent. of the cases, and this standard of relief has been maintained for over five years. By using a little discrimination in the selection of cases, and with increasing experience, the proportion of cases enjoying normal relief would probably exceed 80 per cent.

5. The death rate directly attributable to operation by this technique is very low, even when the worst possible risks are dealt with. By eliminating the very bad risks it can probably be reduced to less than 1 per cent.

RESIDUAL INFECTION OF THE JAWS

BY

R. S. TAYLOR, M.R.C.S., L.D.S.

HONORARY DENTAL SURGEON, SEAMEN'S HOSPITAL, ROYAL ALBERT DOCK, AND NATIONAL HOSPITAL, QUEEN SQUARE

"Residual infection" is a term employed in dental surgery to describe an obscure and indefinite condition occasionally met with in edentulous mouths, or in areas from which teeth have been removed. The condition has recently aroused much interest, but as yet the bone pathology has received little attention. It is proposed in this paper to review the pathology, aetiology, and treatment of residual infection with reference to cases which have come under the writer's personal observation.

The Condition Described

Clinically, a case of residual infection presents certain definite features. The patient is unwell himself, and has the appearance of a mild toxaemia; he is easily tired, and finds difficulty in concentrating his attention on any one subject for a prolonged period. When the upper jaw is affected antral disease is frequently present, and rheumatic pains and digestive disturbances are common. On examination the mucous membrane covering the affected ridges is found to be red and inflamed, and a number of pin-point ulcers, white in colour, are sometimes noted. The area is tender and the underlying bone may be rough, especially in the lower incisor region. The *x*-ray appearance is difficult to describe. In the lower incisor region the appearance may be that of an excrescence, while in the upper jaw the usual appearance is one of ill definition of the bony trabeculations.

The final diagnosis is made by culturing organisms taken from the affected region by means of a small round-headed dental burr, which is dropped into a broth tube. Cultures from positive cases are generally pure, and the infection is most frequently streptococcal in nature.

These patients have usually had very badly infected teeth, which have been removed by forceps. The infected bone has not been removed, and, because of poor resistance on the part of the patient, or as a result of some other factor, resolution of the alveolar bone does not take place, and the condition of chronic infection becomes established.

Treatment

The condition requires treatment not only of the local symptoms, but also of the general debility. Medical diathermy has been recommended, but in the writer's experience it does not produce a permanent cure. Operative treatment can be very satisfactory if it is thorough, but the mere removal of any bony excrescence is not sufficient. This may relieve dental discomfort, but will not benefit the patient's general health. It is essential to remove as much as possible of the septic bone, while maintaining the shape of the alveolar ridge to assist in the subsequent fitting of dentures. When there is widespread infection of bone the operation may be done in several stages, using a local anaesthetic. It may, however, be more satisfactory to give an intratracheal anaesthetic.

A horizontal incision is made in the muco-periosteum on the outer side of the ridge, approximately midway between the crest and the sulcus, and the muco-periosteum is reflected from the ridge and held aside. With a sharp chisel the outer compact layer of bone is pierced, giving access to the cancellous portion. The soft bone lying between the outer and inner alveolar plate is curetted away and the resulting cavity swabbed out with acriflavine in normal saline (1 in 1,000). The area is then packed with acriflavine in glycerin for a period of five minutes. This produces a hyperaemia, and, in consequence, the tissues are thoroughly flushed out. All sharp edges of bone are trimmed off and the soft tissues carefully sutured in place.

Post-operative treatment consists of rest for several days after the operation. A mildly antiseptic mouth-wash is used every four hours, and pain can be controlled by the use of aspirin. A plaster of hot antiphlogistine, applied externally to the face, is very soothing. The sutures are removed on the fourth day, and pain and swelling have usually gone by the seventh. Dentures may be fitted in approximately four weeks after the operation.

Case Records

The following are four selected cases which illustrate the results obtained.

Case 1.—The patient had suffered from ill-health for many years, the chief trouble being arthritis of the hip-joint. He had had antrum, appendix, and teeth operated upon. For two years after the removal of the teeth his dentures were troublesome. *X*-ray examination showed the bone in the lower premolar, lower central incisor, and upper molar regions to be abnormal. A spear-point culture from the lower incisor region gave a growth of *Streptococcus haemolyticus*. At operation soft bone was removed from the affected regions. Three months after the operation dentures were fitted. These proved comfortable, and the general health was better.

Case 2.—The patient was suffering from bilateral antral empyema of fifteen years' duration. The radical operation had been performed and all the teeth extracted ten years previously. When the antral cavities were washed out pain was felt in the molar regions. *X* rays showed dark areas in the upper molar and premolar regions. Spear-point cultures gave growth of *Streptococcus haemolyticus* and *Staphylococcus aureus*. The infected areas were curetted, and within two months the discharge had ceased and dentures were fitted.

Case 3.—The patient had bilateral antral disease, and the ridges of the upper jaw were tender to pressure. *X*-ray examination showed abnormal bone in the upper premolar and molar regions. The outline of the tooth sockets could be seen in the incisor region. Spear-point culture gave growth of *Streptococcus haemolyticus*, non-haemolytic streptococcus, and *Staphylococcus aureus*. A quantity of diseased bone was removed and the antral disease cleared up.

Case 4.—The patient had suffered from sciatica for more than a year, and manipulative treatment had given no result. *X*-ray examination revealed areas of bony rarefaction in the upper right first premolar region, this tooth being absent. Spear-point culture gave *Staphylococcus aureus* in pure culture. The affected area was curetted and a vaccine was prepared from the culture. Three months later the sciatica was gone, and the patient was enjoying normal health.

I wish to acknowledge indebtedness to Dr. Hanschell and Mr. Walters for facilities for laboratory work, and to Captain W. A. D. Drummond for assistance on the clinical side.

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Clinical Memoranda

CYST OF THE THYMUS IN A NEWBORN BABY

According to the literature tumours of the thymus gland appear to be of extreme rarity. Osler quotes that not more than a hundred cases have been recorded. The commonest types of tumours seem to be sarcomatous in nature, while cysts have been regarded as being syphilitic in origin.

I recently encountered a case of cyst of the thymus gland which is sufficiently interesting to warrant publication.

On June 21st, at 9 p.m., I delivered a patient of an apparently healthy full-time female child, after a labour of about six hours. The confinement was a perfectly normal one and no instruments were used. From the moment the baby was born it cried incessantly. Having examined the infant, which seemed physically quite sound, I left the house at about 9.45 p.m. I was called out at 8 o'clock the following morning by the father, who informed me that the baby had been crying all night, and now appeared to be dying. On arrival at the house I found the child was dead.

On June 24th I performed a post-mortem examination. The baby weighed about 6¾ lb. There was no evidence of external violence to be seen. When the thorax was opened the most outstanding feature was the presence of a large globular swelling on the antero-lateral aspect of the right side of the thymus gland. On further examination this swelling proved to be a cyst about as large as a walnut, which appeared to be growing downwards and backwards. Immediately behind the inferior extremity of the cyst lay the ascending aorta. A thick, glairy fluid was expelled from the tumour. The thymus gland itself was greatly enlarged, and seemed to occupy a good deal of the upper portion of the thorax. No other abnormality was discovered at the examination except for a small cyst on the upper pole of the left kidney.

As a result of these findings I concluded that death was due to syncope caused by pressure of the enlarged thymus and cyst on the aorta.

Kingston-on-Thames. M. H. FRIDJOHN, M.B., B.Sc.

A CASE OF INTESTINAL OBSTRUCTION

The following example of intestinal obstruction of rare origin seems to merit record.

A married woman, aged 28, was admitted to the Royal Infirmary, Huddersfield, with the following history. She was quite well until two days before admission, when she commenced to have pain across the lower abdomen. This pain was continual, and, on admission to hospital, was felt more on the right side of the lower abdomen. She had no vomiting, and there was no history of bowel trouble. Micturition had been scalding for the last two weeks, but there was no frequency. Her last period was seven days before admission, and for about a year she had suffered from leucorrhoea, which was yellow and irritating.

Examination.—The abdomen was moving fairly well. Tenderness was marked in the right lower abdominal quadrant, and there was some rigidity. A tender, but not movable, mass was felt in this area. There was no abdominal distension, and nothing of importance was revealed per vaginam. It was thought that the most likely diagnosis was an appendix mass. Temperature 100°, pulse 96, respirations 22.

Operation.—A Battle incision was made, and the following were the findings. The last eight inches of the small intestine and the caecum were very enlarged and hard. The small intestine above this was only slightly distended. Under the impression that the condition was some unusual form of tuberculous caecum, because of the small bowel involvement, or perhaps one of neoplasm, an ileo-transverse colostomy was performed; and as the small intestine above the mass was not much distended and the patient's condition good, a resection of the affected ileum with the caecum and ascending colon was performed, it being necessary to enlarge the original Battle incision to permit this (the nerves being preserved). The specimen was opened, and was found to be packed with small particles that looked like pieces of wood, about 3 by 1/2 mm. The mucous membrane of the affected ileum and the caecum was extensively ulcerated, there being little normal mucous membrane left. The thickening of the wall of the bowel constituted a kind of solid oedema.

Progress.—On further questioning the patient it was discovered that she was very fond of coco-nut macaroons. It appears that she had made some of these cakes three days before admission to hospital, and had eaten the material which was left in the pot. The substance in her bowel was coco-nut. The presumption is that it had formed into a mass in her stomach and had passed to the ileo-caecal region, where it had become impacted. The patient made an uneventful recovery, leaving hospital quite fit. I am indebted to Mr. Pye-Smith for permission to publish this case.

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LIGATURE OF EXTERNAL ILIAC ARTERY AND VEIN IN A MAN AGED 67

A man, aged 67, who had been a labourer in a gasworks and had frequently been in contact with tar, presented himself with a raised ulcerated area on the left side of the scrotum of many years' duration. Removal of the growth, with both testicles and clearance of some slightly enlarged inguinal glands, was carried out; section of the growth showed it to be an epithelioma, and section of the lymph glands showed chronic inflammatory change only.

The patient was seen eight months later. He had a swelling in the left Scarpa triangle at its upper part, there being a transmitted pulsation from the underlying femoral vessels; the lump was the size of a hen's egg, and was fairly well fixed to the deep structures. It was thought hazardous to remove the malignant gland—for such it proved to be—at once for fear of being forced to tie off the vessels *in situ* as a necessary part of the operation, and it was decided to tie off the external iliac artery and vein as a preliminary operation and remove the gland when a collateral circulation had been established.

The classical incision parallel to and above the outer part of Poupart's ligament was made and the vessels reached by stripping up the peritoneum; the vessels were tied off separately by means of a double thickness of No. 4 catgut and a lymph gland of the external iliac chain removed; this on section showed chronic inflammatory changes only. The leg was kept warm in cotton-wool, and an electric lamp put inside the protecting cradle; during the first nine days after operation there was no cause for anxiety, and it was noticed that the tumour in Scarpa's triangle was decreasing in size. On the tenth day his left leg swelled and became painful; then it was feared that gangrene might set in: it was concluded that during the nine days after operation the amount of blood delivered by the collateral arteries was exactly balanced by the amount of blood drained away by the collateral veins, and that on the tenth day there was a sudden full opening out of the collateral arteries without a corresponding dilatation of the draining veins, and the obvious remedy was raising the foot of the bed as high as possible to invoke gravity. The swelling subsided during the next twenty-four hours. The gland was removed without event a few days later, and it was found possible to dissect it from the vessels with the sole sacrifice of the internal saphenous vein; the patient made an uninterrupted recovery.

A section of the gland showed the cells to be similar in type to those of the parent growth.

Longtown, Cumberland. ROBERT RUTHERFORD, F.R.C.S.

Reviews

PREVENTIVE ASPECTS OF MEDICINE

A series of lectures conducted at King's College Hospital Medical School in 1933–4 has now been published by the *Lancet* under the above title.[1] The General Medical Council has recorded its view that throughout the whole period of medical study the attention of students should be directed to the preventive aspects of medicine, and the Committee on Medical Education of the British Medical Association says in its recently published report that "from the beginning of the curriculum, and throughout, attention should be directed primarily to health, its preservation, perfection, or restoration, and not to disease." But there is advantage also in bringing together and summing up, for the benefit of both the student and the practitioner, the present volume of knowledge about the prevention of disease and the applications of this knowledge which fall within the range of day-to-day medical practice. This is what the book under review sets out to achieve. Altogether twenty-five lecturers, each a recognized authority on a branch of medicine, contribute articles which are, in most cases, models of concision, clearness, and accuracy. Names like those of Newman, Leonard Hill, Still, Glover, Greenwood, O'Brien, Poynton, Briscoe, and Topley convey a guarantee that the facts given are reliable and the views expressed are abreast of the times. There is, of course, no attempt to cover the whole field of public health: environmental hygiene is dealt with only in so far as it touches upon the work of the general practitioner. Otherwise the book covers the range of preventive medicine as applied, from the modern point of view, to the individual's mode of living. It is well printed, light to the hand, and contains a full index.

FILTERABLE VIRUSES

It is five years now since Dr. P. HAUDUROY produced his first book on filterable viruses. It was not confined solely to filterable viruses, but considered also the question of filterable forms of bacteria; in fact, quite a considerable space was devoted to the latter subject. The rapid advance made in our knowledge of filterable viruses since 1929 convinced Dr. Hauduroy that to bring his book up to date meant rewriting it. This he has done, and the result is an entirely new book entitled *Les Ultravirus Pathogenes et Saprophytes*,[2] concerning itself solely with the filterable viruses. The author has done wisely to exclude the filterable forms of bacteria, for, as he rightly says, these differ obviously from the filterable viruses and require separate treatment. This is not the only improvement; the whole book strikes one as better done, better balanced. The first portion, some sixty pages in extent, is devoted to technique—a valuable addition. It is perhaps inevitable that a national or even individual outlook should pertain where technique is concerned, but there is little excuse for passing over Elford's work when dealing with ultrafiltration. The sole reference to him here concerns the sterilization of collodion filters with ultra-violet light! And the section on staining viruses is inadequate: no mention is made of the use of Giemsa's or Castaneda's stains. Still there is much sound and valuable advice in these technical chapters.

The main portion of the book is devoted to a description of the different viruses pathogenic for plants, bacteria (bacteriophage), insects, birds, and mammals. The plant virus section is very sketchy—half a dozen pages in all. This is insufficient for a consideration of the many interesting facts which have been discovered in connexion with these plant diseases, particularly those concerning transmission. The section on bird viruses is quite comprehensive, but one is tempted to question the use of the term "parapsittacosis" for the virus of Pachecco. Apart from the fact that both this virus and psittacosis virus produce an illness in the parrot there is no resemblance, and, after all, the appearance of a sick parrot has little that is distinctive whatever the cause. The description of the mammalian viruses takes up about half the book. It is a little uneven, some sections being well done and quite adequate, others sketchy and inadequate. Trachoma, for instance, is dismissed in a dozen lines and warts in five, yet trachoma has been the subject of much interesting research, and Shope's work on papillomatosis of rabbits had given added interest to the question of warts. And the description of influenza finds no mention of the Hampstead work. Surely there was time to include this in view of its importance.

The closing chapters are of a general nature, such as the physical characters of viruses, their physiology, immunity to virus infections, their nature and origin, and the existence of saprophytic examples of this group of micro-organisms. Dr. Hauduroy is convinced that viruses are living things, and in the main his views conform closely to those held by the majority of virus workers in this country. The remarks on false invisibility strike the right note, but one is astonished to find vaccinia and herpes placed in the same size category as foot-and-mouth disease and the bacteriophage. Elford's work is completely overlooked, and Barnard's, too, for that matter, which is surprising since the author has obviously read widely in the virus literature. It is a pity, also, that the book has no index.

Although the modern textbooks of bacteriology devote a considerable space to a consideration of the filterable viruses, there is still room for a small book giving a reliable account of these agents which will serve as an introduction to the subject. Dr. R. W. FAIRBROTHER'S *Handbook of Filterable Viruses*[3] is just such a book. The author has a first-hand acquaintance with his subject. What is more, he has kept an open mind on the various controversial points inevitable in a rapidly developing study such as this one, and so is well fitted to the task he has set himself. The book is confined to those filterable viruses which cause disease in man. It opens with a brief historical outline, and then passes to a consideration of the nature of these viruses. The statement in this chapter (p. 11) that "there is every indication that the viruses . . . form a very heterogeneous group" is rather sweeping, and in the section on centrifugalization it seems rather misleading to cite some of the earlier experiments on psittacosis as an example of the errors inherent in this type of experiment. It was by means of the centrifuge and with this virus that it was first shown that the virulence and other specific properties resided in the elementary bodies. Following this are chapters on cultivation and microscopy and on epidemiology and immunity, both quite good, though we do not understand why the author should still have doubts about the test-tube immunity reactions. Classification has been wisely left alone, the viruses being merely grouped under the headings accepted, probable and possible. It is under these headings in the second half of the book that the viruses known to infect man are described. No one could expect to write a book

[1] *The Preventive Aspects of Medicine.* A Series of Lectures delivered at King's College Hospital Medical School. London: The Lancet Ltd. 1934. (Pp. 376. 10s. 6d. net.)

[2] *Les Ultravirus Pathogenes et Saprophytes.* Par Dr. Paul Hauduroy. Paris: Masson et Cie. 1934. (Pp. 462. 60 fr.)

[3] *Handbook of Filterable Viruses.* By R. W. Fairbrother, M.D., M.R.C.P. London: William Heinemann, Ltd. 1934. (Pp 193, 7s. 6d. net.)

on this subject which would meet with general and unqualified approval, but Dr. Fairbrother has steered a very satisfactory middle course. It is the best book of its kind which has been produced, and can be strongly recommended to students of medicine who wish to know something of this important group of disease agents.

BASSINI'S OPERATION

It is just fifty years since Bassini of Padua published his method for the radical cure of an inguinal hernia, and in the next five years he operated upon 216 cases, in 200 of which the operation was a complete success. When we consider that this was a new operation of a complicated nature carried out before the days of aseptic technique, we must admit that such an achievement marked an epoch in the history of surgery. The original description of the operation was, however, lacking in detail, and its tradition is therefore far from exact. Professor CATTERINA of Genoa, a pupil and assistant of Bassini, has now rectified this in a manner fully worthy of the great teacher to whom the book[4] is intended as a tribute.

The volume consists of a very clear and exact description of the operation, which is in itself of value, but its chief glory, and one which places it on an entirely new plane in surgical literature, is a series of sixteen plates illustrating in colour on their natural scale the full detail of the operation. The plates have been executed by Dr. Orazio Gaigher from dissections prepared by Professor Catterina, and they entirely eclipse any productions of the kind which we have ever seen. Only a combination of high technical knowledge with supreme artistry in water-colour drawing could have produced such exquisite work. As a precise description of a particular operation the book is of real value, but as an artistic production it will be the envy of every surgeon who has ever attempted to describe his work.

An English translation has been published almost simultaneously by Messrs. H. K. Lewis at 30s.

SPINAL ANAESTHESIA

Dr. G. R. VEHRS begins the preface to his volume on *Spinal Anaesthesia*[5] with the following sentence: "This book constitutes a survey of the experimental and clinical records in the field of spinal anaesthesia for the past forty-nine years." This statement is definitely misleading, and the reader who turns the pages for details in the administration of stovaine or percaine will receive a rude shock. Practically no mention is made of these two drugs, which are still serving a useful purpose both in this country and on the Continent. Stovaine held the field for many years, and it is surprising that no mention, except in a list of references, is made of Barker's work with heavy solutions of this drug. As a practical handbook in the use of novocain for spinal anaesthesia, however, this book has much to commend it. The author has evidently taken considerable pains to perfect his technique, and it would appear that, in his hands, spinal anaesthesia with novocain is perfectly controllable.

The opening chapters deal with the anatomy and physiology of the central nervous system, and with the characters of the cerebro-spinal fluid. Although the chemistry and physics of the fluid are dealt with no mention is made of its specific gravity—a curious omission in a work of this sort. It is also a little startling to see that one of the functions of the cerebro-spinal fluid is to permit anaesthesia. The same might be said of the respiratory tract or the rectum. Chapters are devoted to circulation and respiration, and the effect that a spinal anaesthetic has on these two systems. The author discusses fully the action of novocain on the spinal nerves, and explains why the motor block produced is usually less in extent than the sensory block. In his own practice he claims to produce the required amount of anaesthesia, and for the requisite time, by varying the dose of novocain injected and by varying the posture of the patient after injection.

In spite of its omissions this book should provide much of interest to those who frequently employ spinal anaesthesia. It is well produced, and there are numerous illustrations and diagrams. There are also good lists of references at the end of many of the chapters.

AN IRISH MEDICAL MANUSCRIPT

The fifth fasciculus of *Irish Texts*[6] is a handbook of gynaecology and midwifery translated or adapted from the *Rosa Anglica* of John of Gaddesden and from the *Trotula* of the school of Salernum. It is preceded by a treatise on the treatment of wounds, by some good counsel to the physician himself, and by a discussion on the treatment of scabies. The transcription has been made by WINIFRED WULFF, Ph.D., who has already edited an Irish translation of a part of the *Rosa Anglica*, and the fasciculus is dedicated to Dr. Singer and to Dr. Kirkpatrick. The manuscript is described as being written on vellum, richly illuminated, "and the age of the Lord when this book was made was one thousand years and three hundred years and twice twenty years and twelve years more; this book was finished in the year in which Shane Og Mac an Aithne was killed; and it was in the house of Dermot O'Meagher's son it was written." The names of the scribe and of the translator are not known. We are grateful to Dr. Wulff for the transcription, but there is still much work to be done in connexion with the manuscript, apart from the desire to know who Shane was, why he was killed, and where Dermot lived. Dr. Wulff has supplied parallel passages from the printed editions issued two hundred years after the manuscript was written, but this is not enough. A literal translation into Latin or English should be made for the convenience of those who are ignorant of the Irish language. It would then be possible to determine how far this early manuscript differs from the printed versions of the *Trotula* and *Rosa*.

DISEASES OF THE TONSIL

In *Modern Advances in Diseases of the Throat*,[7] by Mr. ARTHUR MILLER, a compilation has been made of some literature mostly published during the last four or five years and relating almost entirely to diseases of the faucial tonsils. The author has relied mainly for his material on *Tonsil Surgery*, by Dr. Robert H. Fowler, and *Children's Tonsils In or Out*, by Dr. Kaiser, both of which excellent books were reviewed in these columns at the time of publication. He also makes use of the Semon Lecture delivered by Professor Kahler in 1932 and some articles and abstracts in the *Journal of Laryngology*.

The book might be useful to a reader quite unacquainted with recent literature, but as no attempt has been made to review recent work in the whole field of laryngology the title produces a feeling of disappointment. The last

[4] *L'Opération de Bassini pour la Guérison Radicale de la Hernie Inguinale.* Par Docteur Attilio Catterina. Paris: Félix Alcan. 1934. (Pp. 57; 16 plates.)

[5] *Spinal Anaesthesia. Technic and Clinical Application.* By George Rudolph Vehrs, M.D. London: H. Kimpton. 1934. (Pp. 269; 81 figures. 21s. net.)

[6] *Irish Texts.* Fasciculus v. Edited by J. Fraser, P. Grosjean, and S. J. and J. G. O'Keeffe. London: Sheed and Ward. 1934. (Pp. 100. 5s. net.)

[7] *Modern Advances in Diseases of the Throat.* By Arthur Miller, F.R.C.S., D.L.O. London: H. K. Lewis and Co. Ltd. 1934. (Pp. xii + 120; 40 figures, 1 coloured plate. 10s. 6d. net.)

chapter, in which the author dismisses malignant disease of the tonsils and soft palate in three pages with an unconvincing advocacy of the advantages of diathermy, completes the impression of the superficial and ephemeral character of the book. The admirable way in which the publishers have produced the letterpress and reproduced the illustrations is worthy of a more serious contribution to the literature of the subject chosen.

Notes on Books

Dr. C. F. WHITE's *Aids to Sanitary Science*[8] has reached its second edition. Much useful information is contained within its modest limits, but compression has sometimes resulted in sheer obscurity, as in the section on vital statistics. Further, the logarithmic method, so called, should be used only for the recalculation of erroneous inter-census population estimates. The article on meteorology does not refer to the Kew pattern barometer or to the millibar of pressure, though both these are now official at the Meteorological Office. It should be noted also that yellow fever is by no means eradicated from West Africa, and that *Leptospira icteroides* never was its causative organism. Such defects as the foregoing mar a book which, on the whole, is pleasantly written and quite frequently displays exemplary conciseness.

A new reference book, *The Author's and Writer's Who's Who*,[9] has been launched by the Shaw Publishing Company, under the editorship of Mr. EDWARD MARTELL, with the assistance of an advisory committee. It is mainly intended as a guide-book for authors, editors, journalists, and publishers in all matters relating to their work. Its chief feature is a biographical directory of more than 600 pages, arranged in double columns on the plan of *Who's Who*. There is also a register of writers on specialized subjects, an index of works of reference and sources of information, and a directory of British and over-seas publications, together with much other classified information of interest and value to persons concerned with the art of writing or the business of literary production.

At a meeting of the Medical Association of South Africa, held at Johannesburg in November, 1932, Dr. A. S. BOYD read a paper on the "Treatment of Cancer by Modified Methods in Serum Therapy, with Record of Recovery in a Case of Secondary Sarcoma." This has now been published in pamphlet form, with illustrations, by Messrs. Oliver and Boyd, of Tweeddale Court, Edinburgh.

The second and final part of the Handbook of Chemotherapy,[10] by Dr. V. FISCHL and Professor H. SCHLOSSBERGER, is concerned with metallic compounds, the first part (reviewed in these columns on August 20th, 1932) with the non-metallic compounds. The chief metals discussed in the part under review are arsenic (207 pages), mercury (75 pages), gold (51 pages), antimony (42 pages). Other metals are dealt with in less than twenty pages each. Iodine compounds are included in this volume (58 pages). In the first place the authors are to be congratulated on having provided an encyclopaedia of the science of chemotherapy in a volume of under 1,000 pages. This has been achieved by a liberal use of tables. For example, the article on arsenical derivatives occupies 204 pages, which are divided into 143 pages of print, 27 pages of tabular matter, and 34 pages of references. These figures indicate the general character of the book, which is essentially that of a work of reference. The need for such a work is best indicated by the fact that the references to the literature on organic arsenicals number nearly 3,000. It will certainly be found invaluable by all who are interested in the subject of chemotherapy. Perusal of its pages impresses the reader forcibly with the vast amount of work that has been carried out in recent years in chemotherapy. The tables give data concerning the activity of thousands of different compounds, and it must be remembered that the published results do not indicate the total work performed, for in this subject a large proportion of negative findings are never published. The authors have provided a satisfactory guide to a mass of literature which is almost inaccessible owing to its bulk.

[8] *Aids to Sanitary Science and Law*. By C. F. White, M.B., Ch.B., D.P.H., D.T.M. Revised by Hugh Willoughby, M.R.C.S., L.R.C.P., D.P.H., D.T.M. and H. Second edition. London: Baillière, Tindall and Cox. 1934. (Pp. vii + 321. 4s. 6d.)

[9] *The Author's and Writer's Who's Who, 1934*. Edited by Edward Martell. London: Shaw Publishing Company, Ltd. 1934. (Pp. 894. 15s. net.)

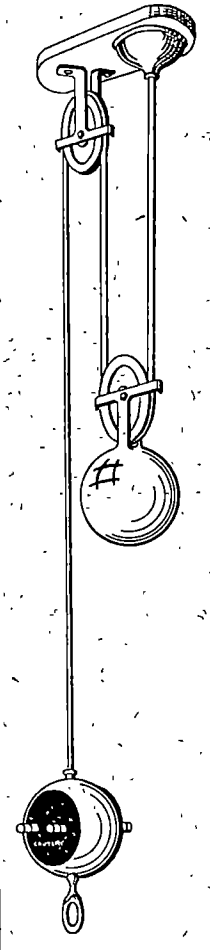
[10] *Handbuch der Chemotherapie*. By Dr. Viktor Fischl and Professor Dr. Hans Schlossberger. Part II. Leipzig: Fischers Medizinische Buchhandlung. 1934. (Pp. 898. M. 55.)

Preparations and Appliances

CAUTERY AND LIGHT APPARATUS IN THE OPERATING THEATRE

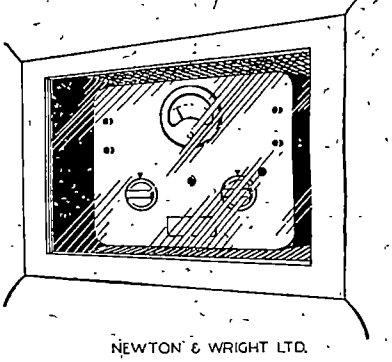
Dr. R. E. JOWETT (Sunderland) writes:

The apparatus described below comprises a control unit arranged for mounting on the wall. In my operating theatre this has been set in a suitable recess behind a glass panel.



The control provides a transformer, having two secondary windings for cautery and surgical light circuits respectively, each being provided with rotatory rheostats. The secondary circuits render the apparatus practically shock-proof. A voltmeter, having a scale reading from 0 to 10, is connected across the light circuit—a handy safeguard in preventing the burning out of small illuminating lamps. The considerable range necessary for bronchoscope lamps and the larger bulbs used in headlights is nevertheless available.

Leading from this control unit, cables are provided in the building to a point above the operating



NEWTON & WRIGHT LTD.

table, from which point a rubber-covered multiple cable is suspended. This cable is of relatively large proportions, in order to reduce its electrical resistance to a minimum, having regard to the low voltage used in cautery work. This cable, dropping from the ceiling, is adjustable by means of a simple counterweight and pulley system, and terminates in a chromium-plated sphere fitted with two pairs of terminals for connexion of the cautery and light instruments. Cautery burners requiring current up to 30 amperes may be used.

The figure gives a good idea of the apparatus, and it will be observed that the design eliminates the use of trailing cables and "extras" near the operating table. It can be washed down, and there are no projecting parts to collect dust. The sphere is easily pushed away to give head room when working, whilst the surgeon's mobility is but little interfered with. The fitting is neat, and has proved extremely satisfactory in use.

It was made for me by Messrs. Newton and Wright Ltd., 471–3, Hornsey Road, N.19.

THE BRITISH ASSOCIATION*

PHYSIOLOGY OF VISION

Two papers in the Section of Physiology dealt with theories relating to visual sensation. Dr. F. W. Edridge-Green said that it had been proved that the cones of the retina were the percipient elements for vision, but the hypothesis that their direct stimulation by light was the essential factor had been assumed in the absence of evidence to this effect. Indeed, the assumption that the colourless and transparent cones could be so stimulated was contrary to all photo-chemical laws, since no effect could be produced by light without its being absorbed. The speaker held that stimulation of the cones was effected as the result of the photo-chemical decomposition of the liquid surrounding them, sensitized by the visual purple. The rods were not percipient elements, but controlled this visual purple. He contended that this theory explained satisfactorily every known fact of vision, including numerous ones which were inexplicable from any other standpoint.

Dr. Ivy Mackenzie pointed out that the function of the anatomical substratum of human vision might be considered from the point of view of physics and biology, as well as of physiology. Physical considerations predominated in the analysis of events in front of the retina. Psychological interpretation played a large part in the events behind the areae striatae, while the processes between the retinae and areae striatae lent themselves to anatomical and physiological observation. The visual pathways between the retinae and areae striatae comprised the basis of visual sensation, as distinct from perception. This neural compendium was of bilaterally symmetrical conformation, and a knowledge of its constituent parts provided the main standard of reference in the localization of brain disease. In the lower vertebrates the bilateral symmetry of this neural compendium was related to the symmetrical character of somatic movement. The tendency to right-handedness in the human subject revealed a difference between the right and left sides of the brain in respect of participation in visual reaction, but only when vision was concerned with perceptual reactions.

PSYCHOLOGY OF SOCIAL PROBLEMS

The presidential address of Dr. Shepherd Dawson in the Section of Psychology contained a strong appeal for the further investigation of the mental aspects of social welfare, which, he said, had been relatively neglected in comparison with the attention paid to the material aspects. The solution of problems such as those of supply and demand, labour and capital, law and order, hygiene, housing, and local and international rivalries, were to be found ultimately in the forces which moved men to action, in their inherited tendencies and acquired habits, in the mentalities of the groups to which they belonged, and in their relations to these groups. If opinions were to yield place to knowledge, the scientific method was just as necessary here as it was in chemistry, physics, or biology. There was a real distinction between ability and capacity; the first was actual, the second potential. Ability was measurable by what could be done here and now; capacity could usually be estimated by what could be done after a course of training. All examinations were tests of ability. Innate qualities only existed with reference to certain external conditions, and must be diagnosed and measured in relation to those conditions. Where the essential training and environmental conditions varied, inferences regarding capacity could only be made with little certainty. Psychologists had hitherto been more concerned to distinguish and measure different kinds of ability which seemed to be dependent on native capacity than to prove their innate basis. It might be possible in the future to evaluate mental characters with some approximation to the accuracy with which physical characters could be assessed. What was needed was more extensive and more co-operative work. The fact that on the whole the least efficient members of the community had the largest families had caused some concern, for it suggested a dilution of the national stock-in-trade. There was, however, very little exact information about the intellect of parents, the number of children who survived to establish families of their own, and their mental status. What little there was pointed to the need of further investigation, for it suggested that the casualties were higher among dull children, but that the losses were more than made good by the greater number of births. The problem was not so serious as some had maintained, but it was sufficiently serious to make this and other problems of mental inheritance worthy of investigation. There seemed to be evidence that there was a correlation between the intelligence of parent and of child; bright parents had a higher percentage of bright children, and defective parents of defective children, but defective parents sometimes had bright children. It seemed possible that the mental deficiency of either defective or bright parents might be due either to external causes or to defective inheritance. The theories of genetic inheritance which had proved to be true in the case of plants, the lower animals, and human anatomical and physiological characters, might apply also to mental characters. If this were so, it was important that these characters should be distinguished, and the manner of their inheritance traced. This would demand the co-operation on a big scale of medical practitioners, biologists, statisticians, and teachers.

SLEEP AND HYPNOSIS

Dr. William Brown, Wilde Reader in Mental Philosophy, Oxford, delivered an address in which he compared the hypnotic state with natural sleep, citing experimental and clinical evidence. Deep-going differences had been thus revealed, as well as superficial resemblances. For example, the muscles were relaxed in sleep, but rigid in hypnosis; tendon reflexes diminished with the onset of sleep, and eventually disappeared, but were retained in all stages of hypnosis. Voluntary reactions to a prearranged stimulus or signal could be elicited in hypnosis, but not in sleep. Yet sleep could pass into hypnosis, and vice versa; there was therefore reason to recognize the existence of some close relationship between them. Moreover, mental dissociation with amnesia could occur in both conditions. Both states might be therapeutically recuperative, and both involved susceptibility to suggestion. Mediumistic trance and cataleptic stupor showed close similarities with the hypnotic state. Sleep was linked up with other manifestations of these states in the phenomenon of dreaming. Measurement of the psycho-galvanic reactions in these various states had thrown further light on their psycho-physiological resemblances and differences. On the neurological side the relation of sleep to hypnosis was probably best expressed in terms of Pavlov's theory, according to which both states involved an internal inhibition in the cerebral cortex; this spread to the subcortical centres in sleep, but remained limited to the cortex in hypnosis. From the therapeutic standpoint hypnosis had proved useful in some cases of war neurosis, in the recall of forgotten emotional upsets which were giving rise to such phenomena as somnambulism, and in the adjusting of disturbances referable to the deeper levels of nerve function.

Mr. W. Whately Carington described an investigation in which word association tests had been applied to three mediums in their normal states and to five trance personalities associated with them. In one case a clear-cut difference between the normal and trance personalities had been thus disclosed. In the second an equally unmistakable similarity had been found. In the third, where four personalities were involved, a complex system of relationships had been discovered. The classical view of secondary personalities, he pointed out, would anticipate significantly similar sets of reactions (determined by the common subconscious) in cases where the trance was genuine, so that no witting misdirection occurred, and suggested that even the latter would not escape detection by the psycho-galvanic reflex. It was accordingly rather difficult to reconcile the results thus obtained with current theory.

* Concluded from page 527.

VOCATIONAL GUIDANCE

The methods and results of vocational guidance were discussed by various readers of papers in the Section of Psychology. Miss J. A. Wales, who described the current methods in Berlin, outlined the arrangement for the giving of trade talks by the Ministry of Labour's vocational advisers to children who were about to leave school. She explained the organization of the juvenile departments of the employment of labour exchanges, where individual advice was given. Cases of difficulty were referred to the special medical officer if the difficulty was one of health, or to the psychological department if there was any doubt as to vocational aptitude. The results of a vocational guidance experiment in Fife were also reported. A group of 472 children attending urban and rural schools had been examined; their ages were between 11 and 12, and psychological re-examinations had followed at approximately yearly periods during the subsequent school attendance. The town children proved to be on the whole superior to the country children in abstract tests, but inferior in practical tests. The verbal tests were found to have the highest consistency in the age period under review. The follow-up studies yielded tentative estimates of the minimal qualifications necessary for various kinds of work. Mr. C. A. Oakley described a recent survey made of all the vocations which school children were likely to take up, from accountancy to wholesale selling, with a view to assisting vocational advisers in schools in dealing with normal cases. He announced that an occupational survey had been prepared, which included information about the necessary abilities and other qualities. Another survey had been made with the intention of determining what psychological tests for children over the age of 11 were at present being used in Great Britain. Mr. A. Rodger described the results of an examination by the National Institute of Industrial Psychology of 400 new Borstal boys. Of those who were subsequently put into work-parties judged suitable for them by the institute, 69.5 per cent. had proved successful. Of the control group in which the Borstal housemasters had been the sole judges, 45.6 per cent. had proved successful. He regarded this difference as statistically significant. He added that a survey of the "failures" of the National Institute showed clearly the importance of the part which should be played in vocational guidance by the study of temperament. Dr. D. B. Cattell maintained that the psychologist ought to be an integral member of the local education service. His main value was as a psychotherapeutist, treating difficult, neurotic, and delinquent children, who were far more numerous and much more neglected than was generally supposed. He was also needed to grade normal children, and to select defective children and those with special educational disabilities. He should design schemes of guidance, and advise on matters relating to the curriculum and school organization. A nucleus of teachers should be trained in routine mental testing.

VITAMIN C

A discussion was held in the Section of Chemistry on ascorbic acid (vitamin C). The history of the subject was narrated by Professor A. Harden, who traced the steps by which the strongly reducing hexuronic acid found in the suprarenal glands and in many vegetable juices had been shown to have powerful antiscorbutic properties. The easy preparation of this substance in quantity from paprika had provided material for the determination of its constitution, its synthesis, and the demonstration of its full antiscorbutic potency. Professor A. Szent-Györgyi said that this acid had become available for medicine too recently to permit full appreciation of its medical applications, but the preliminary clinical investigation had revealed some very striking and unexpected effects. It seemed to be able to cure several diseases against which medicine had hitherto striven in vain, such as purpura haemorrhagica, Werlhoff's disease, certain forms of haemorrhagic nephritis, haemophilia, and pyorrhoea. Such curative effects suggested that humanity was suffering much more gravely from lack of vitamin C than had been realized previously. The major part of pathological pigmentations could be made to disappear by its exhibition. In the short space of time of two years the mysterious vitamin C had been identified, its chemical structure determined, and its synthesis effected. This unparalleled advance had been entirely due to the closest and most friendly international co-operation.

COWS' MILK

The Sections of Chemistry and Agriculture held a joint discussion on the chemistry of milk. Dr. J. F. Tocher stated that the proportions of the constituents of milk varied widely from sample to sample even in the case of bulked milk. In respect of fat and solids-not-fat percentages it had been shown that many cases occurred where the values fell below the prescribed limits under the regulations; these had been made at a time when no accurate knowledge existed of the observed minimum limits in the case of herds. The speaker remarked that this was an illustration of the importance of legal enactments following scientific knowledge, and not preceding it. One of the difficulties encountered was the method of detecting watering, and many cases had occurred when genuine milk had been erroneously condemned as having been watered. An equation had now been found by the speaker from which it was possible to detect watering within certain limits; this could be used in conjunction with the observation of the freezing point. The equation gave the relationship of the four chief constituents to the total solids other than butter fat. The predicted solids had been found to approximate closely to the actual solids in samples from individual cows. When, however, a sample was watered, the predicted values differed significantly from the actual values. Dr. Tocher considered that milk should not be condemned on the results of freezing-point determinations alone. There was as yet no standard for the freezing point of milk, and analysts were not agreed as to the nearest approach to the freezing point of water which occurred in genuine samples of milk. Dr. W. L. Davies produced a table showing the expected levels of composition of normal cows' milk and of milk which must be considered abnormal. There was evidence that abnormality was due to inefficiency in the secretory process in the elaboration of casein from the nitrogenous compounds of the blood and in secreting glucose. Abnormality in the buffer value in the acid range, in the balance of acidic and basic constituents, in the distribution of ionic and non-ionic metallic radicals (calcium), in the amounts of the various forms of casein present, and in the amount of heat-coagulable protein, was reflected by abnormality in rennet action, in "curd tension," and in heat stability at temperatures above 100° C. Dr. S. K. Kon said that biological tests had demonstrated marked seasonal variations in the total vitamin A activity and the vitamin D content of milk. Physical measurements had shown a similar fluctuation in the carotene content. The contents of the three forms of vitamin B appeared to be constant throughout the year, not being affected by the seasons. Vitamin C in milk was either rapidly destroyed by visible light or else it underwent reversible oxidation, the product reacting no more with the vitamin C reagent. The loss in activity of vitamin D was more marked in autumn and winter butters.

The association of members of the Chartered Society of Massage and Medical Gymnastics in private practice has issued a revised edition, dated August, 1934, of its *Directory*. Every person mentioned therein is qualified in massage and is registered with the society. Many hold additional qualifications, which are indicated by abbreviations. All the members have adopted an ethical code which pledges them to work only under the direction of registered medical practitioners. A copy of the *Directory* will be sent, post free, to any doctor on application to the honorary secretary, P.P.A., "Hygeia," Falmouth, Cornwall.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL

LONDON: SATURDAY, SEPTEMBER 22nd, 1934

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THE INSURANCE MEDICAL SERVICE WEEK BY WEEK

Anaesthetic Fee Wrongly Disallowed

A fee claimed by an insurance practitioner for the administration of an anaesthetic was disallowed by the Panel Committee on the ground that the operation was considered by the committee to be outside the scope of medical benefit. The practitioner appealed to the Ministry of Health, and it was decided without the necessity of an oral hearing that the appeal should be allowed. The Panel Committee's observations are interesting, but it is difficult to understand why so extensive an argument should have been put forward in view of the express provision of Clause 9 (7) of the Terms of Service, as follows:

> A practitioner is responsible for providing the services of another practitioner for the administration of an anaesthetic, where necessary, in connexion with any operation (other than an operation in respect of a confinement) which is of a kind usually undertaken by a medical practitioner, and *which the practitioner undertakes, whether under these Terms of Service or not,* whenever such administration does not involve the application of special skill or experience of a degree or kind which general practitioners as a class cannot reasonably be expected to possess.

The Panel Committee's letter runs as follows:

> Form G.P. 19, signed by Dr. ——, stated, near the head of the form, that the operative service rendered was rendered *as being within his obligation* under the Terms of Service, whereas the Committee holds the opinion that the particular service—namely, appendicectomy—was not within his obligation. If the Committee agreed that such an operation was within a practitioner's obligation, it would necessarily follow that any insurance practitioner might be called upon to do the operation, or, alternatively, be called upon to provide the services of a practitioner skilled in the performance thereof, and that is a position which the Committee desired to avoid. It follows that the reason for considering appendicectomy as outside the scope of benefit is that the operation involves the application of "special skill and experience of a degree or kind which general practitioners as a class cannot reasonably be expected to possess," and it seemed to the Committee logical to conclude that Form G.P. 19 was not applicable in this case, because of the words on the form which are named in the second paragraph of this letter. The Committee is aware that the revised Form G.P. 19 does not contain any reference to an operation being *within the obligation,* but many of the older Forms G.P. 19, in which these words occur, are still in use in this area, and Dr. ——'s was one of them. The Committee consequently decided that an anaesthetic fee claim did not lie against the Practitioners' Fund, because it was associated with an operation believed to be outside the scope of benefit, whereas the Committee's opinion is that an anaesthetic fee claim should be allowed only when anaesthetics are required for operations "*of a kind usually undertaken by a medical practitioner.*". See First Schedule, Part I, Terms of Service, Clause 8 (1). The practitioner himself, in this case, performed the operation, and the Committee's opinion was that Form G.P. 45 was more applicable, if it had been submitted within the time limit allowed.

The Department, in communicating its decision to the Panel Committee that the appeal should be allowed, drew attention to the provisions of Clause 9 (7), and especially to the words which appear in italics in the extract quoted above, adding that the practitioner was accordingly entitled to repayment from the Practitioners' Fund of any fee paid by him to the anaesthetist, and that the suggestion that the operation performed by the insurance practitioner may have been outside the scope of his obligations was no ground on which payment of the fee could be questioned by the Panel Committee.

Charging Fees to Insured Persons: Alteration in Terms of Service

Attention has been drawn in these notes to a proposed alteration in Clause 7 (3) of the Practitioners' Terms of Service so as to provide that when a doctor in presenting an account or charging a fee to an insured person was under a genuine misapprehension the matter could be remedied whether or not the patient was on the doctor's list at the date of treatment. In the event of the patient not being on the doctor's list provision is made that, on the withdrawal of the doctor's account or the repayment of any fees paid by the applicant, the practitioner will be credited with the payment to which he would have been entitled out of insurance funds if the applicant had been attended by him as a "temporary resident," and with payments calculated on the basis of the Drug Tariff in respect of any drugs and appliances supplied by the practitioner to the applicant. On the other hand, if the patient was on the doctor's list at the time the doctor is, of course, not entitled to any fee for his services apart from the usual capitation payment for persons on his list. Attention has, however, been drawn to an apparent omission in the new draft of Clause 7 (3), as no payment to the doctor is provided for as regards drugs and appliances supplied in the case of a person on his list. As the doctor would clearly be out of pocket in respect of the drugs and appliances so supplied, steps are being taken to have this matter considered by the Insurance Acts Committee at its next meeting.

POST-GRADUATE COURSES AND LECTURES

OCTOBER AND NOVEMBER, 1934

The following post-graduate courses and lectures to be held in London during October and November have been notified to the British Medical Association. Further particulars may be obtained direct from the hospital concerned, or, in the case of arrangements made by the Fellowship of Medicine (F.M.), from the Secretary of the Fellowship at 1, Wimpole Street, W.1.

Subject	Date	Place of Meeting	Nature of Instruction
Anaesthetics	From Oct. 1	West London Hosp. Post-Grad. College, Hammersmith Rd., W.6	Course
Cardiology	Oct. 8–20	National Hospital for Heart Diseases, Westmoreland St., W.1	F.M. course
"	Oct. 13–14	Royal Chest Hospital, City Rd., E.C.1	F.M. course on diseases of the heart and lungs
Chest Diseases.	Oct. 27–28	Brompton Hospital, Fulham Road, S.W.3	F.M. course
Children's Diseases.	Oct. 1–13	Queen's Hospital, Hackney Road, E.2	" "
"	Oct. 22–Nov. 3	Hospital for Sick Children, Great Ormond Street, W.C.1	Course
Dermatology	Oct. 1–30	St. John's Hospital, 49, Leicester Square, W.C.2	F.M. course
General ...	Oct. 8–20	Metropolitan Hospital, Kingsland Road, E.8	" "
Gynaecology	Oct 22–Nov. 3	Chelsea Hospital for Women, S.W.3	" "
Homoeopathy	Oct. 15–Dec. 17	London Homoeopathic Hospital, W.C.1	Course
Medicine ...	Oct. 13	National Temperance Hospital, Hampstead Road, N.W.1	F.M. lecture-demonstration
"	Oct. 2	Medical Society of London, 11, Chandos St., W.1	Ditto on tremor
"	Oct. 9	" "	Ditto on ataxia
"	Oct. 16	" "	Ditto on giddiness
"	Oct. 23	" "	Ditto on convulsions
"	Oct. 30	" "	Ditto on headache
"	Oct. 18	King's College Hospital Medical School, Denmark Hill, S.E.5	Lecture on difficulties in infant feeding
Neurology	Oct. 8–Dec. 7	National Hospital, Queen Square, W.C.1	Course
"	Oct. 29–Nov. 3	West End Hospital for Nervous Diseases, 73, Welbeck St., W.1	F.M. course
Nose, Ear, and Throat	Oct. 12	Central London Throat, Nose and Ear Hospital, W.C.1	Lecture
Ophthalmology	Oct. 15–Nov. 3	Royal Westminster Ophthalmic Hospital, W.C.2	F.M. course
Pathology ...	Oct. 8–13	Hospital for Sick Children, Great Ormond Street, W.C.1	Course
Physical Medicine	Oct. 1–26	London Clinic, Ranelagh Road, S.W.1	F.M. Course
Psychotherapy	From Oct. 1	Institute of Medical Psychology, 6, Torrington Place, W.C.1	Course
Surgery ...	Oct. 20–21	Royal Albert Dock Hospital	F.M. course of clinical surgery
"	Oct. 11	King's College Hospital Medical School, Denmark Hill, S.E.5	Lecture on tumours of breast
"	Oct. 25	" "	Lecture on causation of limp
Anaesthetics	From Nov. 1	West London Hosp. Post-Grad. Coll., Hammersmith Rd., W.6	Course
Cardiology ...	Nov. 15	King's College Hospital Medical School, Denmark Hill, S.E.5	Lecture on heart disease in middle age
Chest Diseases	Nov. 5–10	Victoria Park Hospital	F.M. course
Children's Diseases	Nov. 26–Dec. 6	Infants Hospital, Vincent Sq., S.W.1	" "
Dermatology	Nov. 26–Dec. 6	Blackfriars Skin Hospital	" "
General	Nov. 5–24	Royal Waterloo Hospital	" "
Gynaecology	Nov. 17–18	Samaritan Hospital, N.W.1	" "
Medicine ...	Nov. 1	King's College Hospital Medical School, Denmark Hill, S.E.5	Lecture on pleurisy
"	Nov. 6	Medical Society of London, 11, Chandos Street, W.1	F.M. lecture-demonstration on failing vision
"	Nov. 13	" "	Ditto on herpes and encephalitis
"	Nov. 20	" "	Ditto on obesity
"	Nov. 27	" "	Ditto on goitre
Nose, Ear, and Throat	Nov. 2, 9, 16, 23, 30	Central London Throat, Nose and Ear Hospital, W.C.1	Lectures
Obstetrics	Nov. 3–4	City of London Maternity Hospital, City Road, E.C.1	F.M. course
Proctology	Nov. 19–24	St. Mark's Hospital	" "
Psychotherapy	Nov.	Institute of Medical Psychology, 6, Torrington Place, W.C.1	Two-week course
Rheumatism	Nov. 20–Dec. 6	British Red Cross Clinic, Peto Place, N.W.1	F.M. course
Surgery ...	Nov. 10	National Temperance Hospital, Hampstead Road, N.W.1	F.M. lecture-demonstration
Surgery ...	Nov. 8	King's College Hospital Medical School, Denmark Hill, S.E.5	Lecture on foreign bodies in air and food passages
"	Nov. 22	" "	Lecture on sterility in women
Tuberculosis	Nov. 29	" "	Lecture on diagnosis of pulmonary tuberculosis
Urology	Nov. 5–17	St. Peter's Hospital, W.C.2	F.M. course
Venereal Diseases	Nov. 12–Dec. 8	Lock Hospital, 91, Dean Street, W.1	" "

Courses in general hospital practice may be begun at any time, and may be taken for any period, at the West London Hospital Post-Graduate College, Hammersmith Road, W.6.

In addition to the above courses the following for the higher qualifications have been arranged.

Subject	Date	Place of Meeting	Degree or Diploma
Bacteriology	From Oct.	London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1	Dip. Bact.
Medicine	From Oct. 29	Charing Cross Hospital Medical School	M.R.C.P.
Nose, Ear, and Throat	Oct. 1–27	Central London Throat, Nose and Ear Hospital, Gray's Inn Road, W.C.1	D.L.O.
Ophthalmology	From Oct. 15	Royal Eye Hospital, St. George's Circus, S.E.1	D.O.M.S.
"	From Oct.	Royal London Ophthalmic Hospital, City Road, E.C.1	"
Public Health	From Oct. 1	London School of Hygiene and Tropical Medicine	D.P.H.
"	From Oct.	Royal Institute of Public Health, 23, Queen Sq., W.C.1	D.P.H.
"	From Oct. 1	North-Western Hospital, Lawn Road, N.W.3	D.P.H. (course in hospital administration)*
"	From Oct. 1	Brook Hospital, Shooter's Hill, S.E.18	" "
Radiology ...	From Oct. 8	Cancer Hospital, Fulham Rd., S.W.3	D.M.R.
Surgery ...	From Oct. 22	King's College	Primary F.R.C.S. (course in anatomy and physiology)
Tropical Medicine	From Oct. 1	London School of Hygiene and Tropical Medicine	D.T.M. and H.
Medicine ...	Nov. 13–Dec. 6	National Temperance Hospital, Hampstead Road, N.W.1	M.R.C.P. (F.M. course)

* Inquiries to be made to Medical Officer of Health, L.C.C., Public Health Department (Special Hospitals), Victoria Embankment, E.C.4.

Correspondence

"FAMILY DOCTORS"

SIR,—There will always be "family doctors"; they are a pleasant, mollifying necessity. True, alas! that their sphere is much restricted, in the ways indicated by your two "G.P." correspondents. But note that in all the instances named the doctor is more or less functioning. One has just the feeling, moreover, if it may be said without offence, that we are a little at fault in having let slip from our hands such matters as infant welfare, in which an efficient family doctor can speak with all the strength of long practical experience behind him to reinforce his adoption of new methods as they arise. We have to accept the *tempora mutantur* element in the matter and adapt ourselves to things as they arise.

But that the family doctor, to give him his proper title, will remain is unquestionable. He is, by and large, *the* profession, known personally to the common folk, their stay in the first instance whatever may arise. His business is the necessary work of first aid in diagnosis, which must come before treatment, and this must remain in his hands. There are even spheres of work in which he may be quite a specialist in himself, but that is another story. My point is that the family doctor may take heart of grace and feel that there is always room for him; and that he, more than any other, represents the profession in the eyes of the people.—I am, etc.,

St. Andrews, Sept. 16th. C. E. DOUGLAS.

BOOKS ADDED TO THE LIBRARY

The following books were added to the Library of the British Medical Association during August, 1934:

Alexander, G. F.: Ocular Dioptrics and Lenses. 1934.
Atkinson, D. T.: External Diseases of the Eye. 1934.
Berkeley, Sir C., et al.: Diseases of Women. Fifth edition. 1934.
Bernard, L., and Pellissier: Les Suppurations Gangreneuses du Poumon. 1933.
Bouman, L.: Diffuse Sclerosis. 1934.
Brocq-Rousseu, D., and Roussel, G.: Le Sérum Normale. 1934.
Castellani, Sir A.: Climate and Acclimatization. 1931.
Charles, E.: Twilight of Parenthood. 1934.
de Chazal, E. L., and Rouget, F. A.: Guide Pratique d'Hygiène Infantile. Fourth edition. 1933.
Chevallier, P., and Bernard, J.: Les Adénopathies Inguinales. 1932.
Dean, F., and Spence, C. H.: Hospital Accounting and Secretarial Practice. 1933.
Dickinson, R. L.: Human Sex Anatomy. 1933.
Dietten, H.: Die Lungentuberkulose. 1934.
Duke-Elder, Sir S.: Recent Advances in Ophthalmology. Third edition. 1934.
Engelstad, R. B.: Über die Wirkungen der Röntgenstrahlen auf die Lungen. 1934.
Ferrier, P.: La Guérison de la Tuberculose. Second edition. 1934.
Fielding, M.: Parenthood. Third edition. 1934.
Guéniot, A.: Pour Vivre Cent Ans. 1933.
Hammond, T. E.: Constitution and its Reaction in Health. 1934.
Henrijean, F.: Le Dualisme de la Contraction Cardiaque. 1933.
Kraetzer, A. F.: Your Long-Suffering Stomach. 1934.
Leakey, L. S. B.: Adam's Ancestors. 1934.
Leuret, E., and Caussimon, J.: Les Réactions du Tissue Pulmonaire dans la Tuberculose. 1933.
Loewenthal, M.: Life and Soul. 1934.
Morson, C.: Urinary Infections. 1933.
Parsons, W.: Circulation of the Blood. 1934.
Pearn, O. P. N.: Mental Deficiency Nursing (Simplified). 1934.
Picquet, J.: Les Abcès Cérébraux et leur Traitement. 1931.
Quigley, H., and Goldie, I.: Housing and Slum Clearance in London. 1934.
Reynard, H.: Institutional Management and Accounts. 1934.
Roger, H.: Les Troubles du Sommeil. 1932.
Rudaux, P., and Montlaur, H.: Dépistage de la Syphilis en Pratique Obstétricale. 1931.
Sayé, L.: Pneumolyse Intrapleurale. 1932.
Timme, W.: Lectures on Endocrinology. Second edition. 1932.
Wilkinson, F., and Forty, F. J.: Swimming Bath Water Purification. 1934.
Wu Lien-Teh, Chun, J. W. H., Pollitzer, R., and Wu, C. Y.: Cholera: A Manual for the Medical Profession in China. 1934.

Naval and Military Appointments

ROYAL NAVAL MEDICAL SERVICE

Surgeon Commander W. J. Morris to the *Valiant*.

Surgeon Lieutenant Commanders G. A. Miller to the *Pembroke*, for the *Harrier*, for trials; R. R. Baker to the *Drake*, for Royal Naval Barracks, and to the *Hermes* on recommissioning; R. L. G. Proctor and J. M. Sloane to the *President*, for course.

Surgeon Lieutenant S. J. Savage to be Surgeon Lieutenant Commander.

Surgeon Lieutenant R. G. Dingwall's seniority is antedated to October 2nd, 1930.

Surgeon Lieutenants D. A. Hovenden to the *Encounter*; T. F. Davies to the *Drake*, for Royal Naval Barracks; S. Gay French to the *Drake*, for Royal Naval Barracks, and to the *Hermes* on recommissioning; C. Ommanney-Davis to the *President* for course; J. W. L. Crosfill to the *Dolphin*.

Surgeon Lieutenants (short service) R. L. Allan's and D. W. Walker's seniority have been antedated to April 14th, 1931, and November 27th, 1933, respectively.

E. D. Caldwell, P. K. Fraser, A. J. Glazebrook, W. A. S. Grant, D. P. Gurd, E. James, R. M. Kirkwood, J. W. Rhys, R. F. Stenhouse, and G. D. Wedd to be Surgeon Lieutenants for short service.

ROYAL NAVAL VOLUNTEER RESERVE

Surgeon Lieutenant A. C. Howard's resignation has been accepted.

Probationary Surgeon Lieutenant P. K. Fraser's commission has been terminated on transfer to the Royal Navy.

Probationary Surgeon Sublieutenants J. B. W. Hayward to the *Drake*, for Royal Naval Barracks; W. H. Osborn to the *Cairo*.

ROYAL ARMY MEDICAL CORPS

Lieut.-Col. G. W. W. Ware, D.S.O., having attained the age for retirement, is placed on retired pay.

Major C. Crawford-Jones to be Lieutenant-Colonel.

Lieutenant T. D. Phelan to be Captain.

SUPPLEMENTARY RESERVE OF OFFICERS: ROYAL ARMY MEDICAL CORPS

Captain E. J. Fitzgerald, from R.A.M.C., T.A., to be Captain.

J. Morgan to be Lieutenant.

ROYAL AIR FORCE MEDICAL SERVICE

Squadron Leader (Honorary Wing Commander) E. Huntley, O.B.E., relinquishes his temporary commission on completion of service, and is permitted to retain the honorary rank of Wing Commander.

Flight Lieutenant (Honorary Squadron Leader) E. E. Isaac, M.C., relinquishes his temporary commission on completion of service, and is permitted to retain the honorary rank of Squadron Leader.

Flying Officer J. A. Crockett to No. 3 Armament Training Camp, Sutton Bridge.

TERRITORIAL ARMY

Lieut.-Col. A. M. Johnson, M.C., T.D., from R.A.M.C., to be Colonel.

ROYAL ARMY MEDICAL CORPS

Major R. W. Swayne, O.B.E., on ceasing to be employed, retires and retains his rank, with permission to wear the prescribed uniform.

TERRITORIAL ARMY RESERVE OF OFFICERS: ROYAL ARMY MEDICAL CORPS

Major W. T. Gardiner, M.C., having attained the age limit, retires and retains his rank, with permission to wear the prescribed uniform.

INDIAN MEDICAL SERVICE

Major W. J. Webster, M.C., has been appointed to officiate as assistant director, Central Research Institute, Kasauli.

Lieutenants W. M. E. Anderson and H. B. Wright relinquish their probationary appointments.

Association Notices

BRANCH AND DIVISION MEETINGS TO BE HELD

KENT BRANCH: ROCHESTER, CHATHAM, AND GILLINGHAM DIVISION.—At Bull Hotel, Wednesday, September 26th. Proposed new ethical rules at A.R.M.; Gillingham Invicta Medical Aid Society. Dinner at 7.45 p.m.

LANCASHIRE AND CHESHIRE BRANCH: HYDE DIVISION.—Excursion to Wedgwood Pottery Works, Thursday, October 11th, 2.30 p.m.

LANCASHIRE AND CHESHIRE BRANCH: SOUTHPORT DIVISION.—At 52, Hoghton Street, Southport, Friday, September 28th, 8.30 p.m. Report of representative on Annual Representative Meeting, Bournemouth, etc.

METROPOLITAN COUNTIES BRANCH: KENSINGTON DIVISION.—At Hospital for Epilepsy, Maida Vale, W., Friday, September 28th, 8.45 p.m. Dr. W. J. O'Donovan, M.P.: "Neuroses of the Skin and their Treatment."

METROPOLITAN COUNTIES BRANCH: SOUTH-WEST ESSEX DIVISION.—At Wesleyan Schools, High Road, Leyton, Tuesday, September 25th, 9.15 p.m. Mr. W. J. Foster: "National Health Insurance, Some Discursive Remarks."

NORFOLK BRANCH: WEST NORFOLK DIVISION.—At West Norfolk and King's Lynn Hospital, Thursday, October 11th, 3 p.m. Discussion with county M.O.H. on further details of the council's ante-natal examination scheme.

NORTH OF ENGLAND BRANCH: NORTH NORTHUMBERLAND DIVISION.—At Alnwick Infirmary, Tuesday, September 25th, 3 p.m. Election of officers; report of representative on Annual Representative Meeting, Bournemouth, etc.

DIARY OF SOCIETIES AND LECTURES

CAMBRIDGE MEDICAL SOCIETY.—At Addenbrooke's Hospital, *Fri.*, 2.30 p.m. Discussion on Hypnotics, to be opened by Dr. F. B. Parsons and Dr. G. S. Haynes.

POST-GRADUATE COURSES AND LECTURES

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole Street, W.—*Westminster Hospital*, S.W.: Medical and Surgical Course; open only to male graduates. *Hospital for Consumption*, Brompton, S.W.: All-day Course in Diseases of the Chest. *Gordon Hospital*, Vauxhall Bridge Road, S.W.: All-day Course in Proctology. *National Temperance Hospital*, Hampstead Road, N.W.: Tues. and Thurs., 8 p.m., Coaching Class for Final F.R.C.S. *Medical Society of London*, Chandos Street, W.: Tues., 2.30 p.m., Lecture-Demonstration (illustrated by cases) by Dr. Clark-Kennedy on Paraplegia. *Panel of Teachers*: Individual clinics in various branches of medicine and surgery available daily. Courses of instruction are open only to members of the Fellowship.

LIVERPOOL UNIVERSITY CLINICAL SCHOOL ANTE-NATAL CLINICS.—Royal Infirmary: *Mon.* and *Thurs.*, 10.30 a.m. Maternity Hospital: *Mon., Tues., Wed., Thurs.*, and *Fri.*, 11.30 a.m.

MANCHESTER ROYAL INFIRMARY.—*Tues.*, 4.15 p.m., Mr. Geoffrey Jefferson, Early Diagnosis and Prognosis of Cerebral Tumours. *Fri.*, 4.15 p.m., Dr. N. Kletz, Demonstration of Medical Cases.

British Medical Association

OFFICES, BRITISH MEDICAL ASSOCIATION HOUSE
TAVISTOCK SQUARE, W.C.1

Departments

SUBSCRIPTIONS AND ADVERTISEMENTS (Financial Secretary and Business Manager. Telegrams: Articulate Westcent, London).
MEDICAL SECRETARY (Telegrams: Mediseca Westcent, London).
EDITOR, BRITISH MEDICAL JOURNAL (Telegrams: Aitiology Westcent, London).
Telephone numbers of British Medical Association and British Medical Journal, Euston 2111 (internal exchange, four lines).

SCOTTISH MEDICAL SECRETARY: 7, Drumsheugh Gardens, Edinburgh. (Telegrams: Associate, Edinburgh. Tel.: 24361 Edinburgh.)
IRISH MEDICAL SECRETARY: 18, Kildare Street, Dublin. (Telegrams: Bacillus, Dublin. Tel.: 62550 Dublin.)

Diary of Central Meetings

SEPTEMBER

25 Tues. Consultants Board, 4.30 p.m.
27 Thurs. Medical Students and Newly Qualified Practitioners Subcommittee, 3.30 p.m.

OCTOBER

2 Tues. Public Health Committee, 2 p.m.
9 Tues. Central Ethical Committee, 2.15 p.m.
19 Fri. Spa Practitioners Group Committee, 11 a.m.

VACANCIES

ABERDEEN ROYAL INFIRMARY.—Senior Resident Officer.
ALTRINCHAM GENERAL HOSPITAL.—Senior H.S. (male).
AYLESBURY: ROYAL BUCKINGHAMSHIRE HOSPITAL.—Second R.M.O. (male).
BATH: ROYAL UNITED HOSPITAL.—(1) H.S. (2) Out-Patient and C.O. Males, unmarried.
BIRKENHEAD GENERAL HOSPITAL.—C.O. (male).
BIRMINGHAM CITY.—(1) R.A M.O. and (2) Senior A.M.O. in the Tuberculosis Section of the Public Health Department. (3) J.M.O.'s (males) at Dudley Road Hospital.
BIRMINGHAM: GENERAL HOSPITAL.—H.S.
BOLTON COUNTY BOROUGH.—A.M.O. (male) at Townley's Hospital, Farnworth.
BRIDGE OF WEIR: CONSUMPTION SANATORIA OF SCOTLAND.—(1) R.M.O. (male). (2) R.M.O. (female).
BRIGHTON: ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—(1) H.S. (2) H.P. Males.
BRIGHTON: ROYAL SUSSEX COUNTY HOSPITAL.—Casualty H.S. (male, unmarried).
BRISTOL ROYAL INFIRMARY.—Assistant to the Cancer Research Department.
BURTON-ON-TRENT GENERAL INFIRMARY.—Third H.S. (male).
CANTERBURY: KENT AND CANTERBURY HOSPITAL.—H S. (male).
CARDIFF: KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.—Two half-time Assistant Tuberculosis Officers.
CHARING CROSS HOSPITAL, Charing Cross, W.C.—Hon. Clinical Assistant in the Radiological and Electro-Therapeutics Department.
CHELTENHAM GENERAL AND EYE HOSPITALS.—H.S.
CHEPPING WYCOMBE BOROUGH.—(1) M.O.H. (2) School M.O. (3) M.O. for Maternity and Child Welfare. (4) Police Surgeon.
CHESTER CITY AND COUNTY.—Deputy M.O.H. and School M.O.
CHESTER ROYAL INFIRMARY.—Hon. Assistant Ophthalmic S.
CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS, Victoria Park, E.—H.P. (male).
DERBY CITY HOSPITAL.—Third R.M.O. (male).
DEVONPORT: ROYAL ALBERT HOSPITAL AND EYE INFIRMARY.—Assistant H.S. (unmarried).
EXETER: ROYAL DEVON AND EXETER HOSPITAL.—H.S. to Ear, Nose, and Throat Department (male).
GLASGOW CORPORATION.—J.R.M.O. (male) at Hawkhead Asylum.
HERTFORD COUNTY HOSPITAL.—(1) H.P. (2) H.S. Males. (3) Hon. Assistant P.
HERTFORDSHIRE COUNTY COUNCIL.—M.O. (female) for Maternity and Child Welfare.
HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton Road, S.W.—(1) A.R.M.O.'s. (2) H.P.'s. (3) H.P. (male) at the Sanatorium, Frimley.
HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.—(1) R.M.O. (2) H.P. Males.
HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) H.P. (2) H.S. Males, unmarried.
HOSPITAL OF ST. JOHN AND ST. ELIZABETH, Grove End Road, N.W.—R.H.S. (male).
INFANTS HOSPITAL, Vincent Square, S.W.—Hon. Clinical Assistant in Out-patients' Department.
IPSWICH: EAST SUFFOLK AND IPSWICH HOSPITAL.—Two H.S. Males.
JEWISH MATERNITY HOSPITAL, Underwood Street, E.—R.H.S.
KING'S COLLEGE HOSPITAL, Denmark Hill, S.E.—Junior S.
LANCASHIRE COUNTY COUNCIL.—J.H.S. at Biddulph Grange Orthopaedic Hospital.
LEEDS: GENERAL INFIRMARY.—Radio-Surgical H.S.
LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) M O. to the Special Departments and Resident Anaesthetist. (2) R.C.O.
LONDON COUNTY COUNCIL.—Resident Medical Superintendent at St. George in the East Hospital, Wapping, E.
LONDON LOCK HOSPITAL, Dean Street, W.—R M.O. to Male Departments.
LONDON LOCK HOSPITAL, Harlow Road.—R.M O. to Female Department.
LOWESTOFT AND NORTH SUFFOLK HOSPITAL.—J.H.S. (male).
MANCHESTER: ANCOATS HOSPITAL.—(1) Assistant Pathologist. (2) Medical Registrar. (3) R.M O. (4) H.P.
MANCHESTER: ROYAL MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—R.S.O. (unmarried).
MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES.—H.S.
MARGATE: ROYAL SEA BATHING HOSPITAL.—Visiting S. for Ear, Nose, and Throat cases.
MERTHYR GENERAL HOSPITAL.—H.S.
MEXBOROUGH: MONTAGUE HOSPITAL.—J.H.S. (female).
NEWCASTLE-UPON-TYNE: ROYAL VICTORIA INFIRMARY AND UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.—Junior Assistant in the Pathological Department and Demonstrator.
NEWMACHAR: ABERDEEN CITY MENTAL HOSPITAL, Kingseat.—J.A.M.O. (male).
OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—(1) Hon. Assistant Anaesthetist. (2) R.S.O. (male).
OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—R.M.O. at Osler Pavilion, Headington.
PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—(1) H.P. (2) H.S. Males, unmarried.
PENSHURST: CASSEL HOSPITAL FOR FUNCTIONAL NERVOUS DISORDERS.—Medical Director (male).
PLYMOUTH CITY.—J.A.M.O. at City (General) Hospital.
QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone Road, N.W.—Resident Anaesthetist.
QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—R.M.O.
READING: ROYAL BERKSHIRE HOSPITAL.—Pathological Assistant (male).
ROYAL EYE HOSPITAL, St. George's Circus, S.E.—Research Scholarship.
ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—R.C.O. (female).
ROYAL NATIONAL ORTHOPAEDIC HOSPITAL, Great Portland Street, W.—Three Surgical Registrars. Males.
ROYAL NAVAL DENTAL SERVICE.—Three Vacancies as Dental Officer.
RUGBY: HOSPITAL OF ST. CROSS.—Three R.M.O. (males).
ST. MARY'S HOSPITAL, Cambridge Place, W.—Casualty H.S.
ST. PAUL'S HOSPITAL FOR DISEASES (INCLUDING CANCER) OF THE GENITO-URINARY ORGANS AND SKIN, Endell Street, W.C.—H.S.
SHEFFIELD CITY.—J.A.M.O. (male) at the City General Hospital.
STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—H.P.
TAUNTON: TAUNTON AND SOMERSET HOSPITAL.—Senior House M.O. (male).
TORQUAY: TORBAY HOSPITAL.—H.S. (male, unmarried).
WESTERN OPHTHALMIC HOSPITAL, Marylebone Road, N.W.—(1) Senior R H.S. (2) J R.H.S.
WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Hon. Assistant P.
WILLESDEN GENERAL HOSPITAL, Harlesden Road, N.W.—(1) C.O. (2) H.P. Unmarried.
WIMBLEDON HOSPITAL, Thurstan Road, S.W.—R.M.O. (male).
WORCESTER ROYAL INFIRMARY.—Hon. P.

CERTIFYING FACTORY SURGEONS.—The following vacant appointments are announced: Ketton (Rutlandshire), West Ham (Essex), Long Sutton (Lincolnshire), Costock (Nottinghamshire), Wallasey (Cheshire). Applications to the Chief Inspector of Factories, Home Office, Whitehall, S.W.1, by October 2nd.

This list is compiled from our advertisement columns, where full particulars are given. To ensure notice in this column advertisements must be received not later than the first post on Tuesday mornings. Further unclassified vacancies will be found in the advertising pages.

APPOINTMENTS

DIGGER, T., M.R.C.S., L.R.C.P., L.D.S. R.C.S., Honorary Dental Surgeon, Cheltenham Hospital for Children.
GUTHRIE, Sylvia K., M.D., M.R.C.P., Honorary Assistant Visiting Physician, Manchester Babies' Hospital.
LEWSEN, S. Charles, M.R.C.S., L.R.C.P., Honorary Assistant Physician, Margaret Street Hospital for Consumption, W.
SPICKETT, J. S., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Greenwich District (London).

BIRTHS, MARRIAGES, AND DEATHS

The charge for inserting announcements of Births, Marriages, and Deaths is 9s., which sum should be forwarded with the notice not later than the first post on Tuesday morning, in order to ensure insertion in the current issue.

MARRIAGES

CARLING—STEEDMAN.—At Rotherfield, Peppard, Alan Carling, B.M., B.Ch., son of Mr. Henry and Dr. Esther Carling, to Helen Steedman, S.R.N., daughter of Mr. George Steedman.
EVANS—THOMPSON.—On September 15th, at Christ Church, Southport, by the Rev. Arthur Lunt, B.A., R. Trevor Evans, LL.M., Liverpool, to Bessie Estelle, only daughter of H. Marshall Thompson, M.B., Ch B., Scarisbrick Street, Southport.
SILVERSIDES—SECKER.—On September 11th, 1934, at St. Bartholomew's Church, Leeds, by the Rev. Charles Jenkinson, assisted by the Rev. F. E. Mercer, Joseph William, M.B., Ch.B., only son of Mr. and Mrs. J. Silversides of Leeds, to Alison Christine, elder daughter of Mr. and Mrs. J. W. Secker of Leeds.
STRATFORD—BEDDALL.—On September 15th, at the Parish Church, Pinner, Martin Gould Stratford, M.B., B.S, eldest son of Howard M. Stratford, F.R.C.S.Ed., and Mrs. Stratford, Cheniston Lodge, Kensington, to Mavis Muir Beddall, M.R.C.S., L.R.C.P., elder daughter of Mr. and Mrs. Muir Beddall, Westbury Lodge, Pinner, Middlesex.

Tavistock Square, in the Parish of St. Pancras, in the County of London. Printed and published by the British Medical Association, at their Office,

British Medical Journal

SATURDAY, SEPTEMBER 22nd, 1934

INSURANCE AND PUBLIC HEALTH

One of the most cogent and important criticisms of national health insurance systems is to be found in the *Canadian Public Health Journal* for July of this year. The article is not by a member of the medical profession, but comes from an eminent consulting actuary, Mr. Hugh H. Wolfenden of Toronto. It embodies an address given in that city in May, 1934, at a conference of the Canadian Public Health Association, the Ontario Health Officers' Association, and the Ontario Medical Association. The subject is admirably presented and the article very well written. It does not deal with any detailed features of national health insurance schemes or even with the actuarial problems which arise in connexion with them, but proceeds, after a brief review of the early history of insurance data and the relations between actuaries and medical officers of health, to re-examine briefly the whole problem which such schemes are designed to meet, without preconceived notions of what the best solution may ultimately prove to be.

In the course of his remarkably clear and ordered discussion the author brings out two points of fundamental importance which have been almost universally ignored or slurred over in conferences and writings on this subject. One of these is the way in which existing national health insurance schemes depart from strict conformity with the principle of insurance; the other is the appropriate position of health insurance in any comprehensive public health programme. Neither of these matters has, of course, been entirely outside the vision of some of those who in this country were responsible for initiating national health insurance, or of some of those whose business it has been to administer it; but they have not previously been enunciated so succinctly and definitely as in Mr. Wolfenden's article. In the space at his disposal the author is unable to consider them fully or to discuss whatever justification may be alleged for the unusual features to which attention is drawn. It may be wise, therefore, to emphasize that further elucidation and elaboration of these points would be valuable.

"A true insurance plan implies simply the co-operative association of a large number of individuals, who agree to share amongst themselves the burdens arising from the occurrence of a particular contingency (in this case sickness) by payment of the necessary contributions into a common fund; and it is fundamental that the group of persons must be reasonably homogeneous, that the risks must be predictable within certain obviously narrow limits, and that the claims must be absolutely provable."

With voluntary insurance funds the ultimate responsibility is the concern always of the members themselves, and cannot be shifted on to other persons or the State. With compulsory national health insurance schemes as so far established, though the real insurance principle of shifting the burden from the individual to a homogeneous group of his own fellow members is not ignored, it is vitiated and overborne by the fact that this is not done without external aid. Indeed, the main feature of the schemes is a transference of a large part of the burden from those of the limited class included within the scheme on to other shoulders—those of the employers and the tax-payers. This feature being so prominent there comes into force the inevitable tendency to exploit the other man's ability to pay, and sometimes to prolong sickness through the continuance of which benefits may be obtained. All this is obviously true, and should be clearly envisaged. Yet it may still be worth while for the State—that is, the community in general—to establish and support such a system, and knowingly to carry some of the load and to compel employers to take their share, even while recognizing its drawbacks and imposing conditions and regulations with a view to minimizing these as far as may be. Whether this is worth while, and, if so, in what proportions the burdens should be distributed, is not in the least a medical question, but must be determined by each State in the light of its own economic, social, and political conditions. At present, however, some such system appears to be an almost essential feature of the social economy of Western civilization on its existing basis.

Further, unless illness is to be regarded as being either a mysterious dispensation of providence or a quite unavoidable accident, it is contended that the establishment of any national health insurance system which removes the main financial obligations of illness from one section of the community to the rest should logically be preceded, or at least accompanied, by extensive health propaganda, by the enforcement of public health measures by penalties for their breach, and by the requirement of compulsory periodic health examinations of every individual, as well as the comprehensive registration of sickness. These are looked upon as essential measures of control, without which the insurance scheme must be inequitable to the insured and unjust to the uninsured portion of the community. "We are permitting people to become ill individually through misfortune or ignorance or carelessness, but when they have succeeded in becoming ill it is then said to be the responsibility of the whole community to cure them." It may be true that in a comprehensive review of preventive health measures *de novo* it would be "much more logical to consider the establishment of health insurance to alleviate the economic burdens of the residual sickness which the public health programme would be unable to prevent"; and that "health insurance in such circumstances would cost far less than under present conditions and would be far easier to control." It must be remembered, however, that, after all, in a very large number of cases illness is a sheer misfortune and that very few sufferers

really enjoy it ; that in a further proportion it is the community rather than the individual who is at fault ; and that, as a matter of practice, it would almost always be impossible to prove that a particular illness had been brought about exclusively by the patient's own wilfulness or carelessness.

The place of the English insurance scheme among preventive health measures was not ignored by its promoters, although, apart from a small amount of health propaganda undertaken by some insurance committees and the much more important preventive work done by insurance medical practitioners in their daily consultations, full advantage has never been taken of the opportunities afforded. More measures of control may be needed, and the relative advantages and disadvantages of compulsory periodic health examinations and of the systematic and confidential registration of illness, or of some particular forms of illness, might well be further considered. Towards the conclusion of his article Mr. Wolfenden points out that, whatever form of insurance is adopted or whatever are the conditions in which it is established, the fullest co-operation between the public health officers, the medical and dental professions, and the actuary would still be required.

PROBLEMS OF SOCIAL PSYCHOLOGY

The presidential address by Dr. Shepherd Dawson to the Section of Psychology at the recent meeting of the British Association was mainly concerned with the assessment of natural capacity, particularly with the problems of differentiating its biological determinants from those which depended on external conditions. The President made a useful distinction between ability and capacity. The former is the resultant of innate processes and the totality of post-natal experiences summed up in the term "environment" or "nurture" ; the latter, a kind of Kantian noumenon, is a quality or complex of qualities the reality of which can only be inferred from the knowledge or skill through which it finds its expression. Mental tests, however scrupulously devised, are primarily measures of ability ; it is only when the innate qualities determining ability are unaffected or hardly affected by training that such tests also gauge capacity. To the psychologist the distinction is important in so far as it safeguards him from the error of considering the individual in a social vacuum—that is, without reference to the kind of society he lives in and the influences and incentives to which he is subjected. It does not, of course, follow that in a society which enjoyed (according to the adherents of one political philosophy) or endured (according to those who hold the opposite views) a condition of economic equality the differences between one man and the next would only be those which were genetically determined and thus a measure of relative biological worth. Even within the same family, as Dr. Dawson pointed out, there occur environmental vicissitudes which may affect the ultimate qualities of its members. Parents, for instance, "become more experienced, or more indulgent, in the management of their children ; school-fellows vary ; and the children themselves vary in their relationships to one another and to the rest of the world."

The problems of the social psychologist are immensely complicated by our living in communities of which all the members do not start at scratch, and there could be no dissent from Dr. Dawson's view that the most humane method of overcoming this difficulty would be "to improve the conditions of life so as to give all a chance." Even then there would remain the difficulty of isolating and defining mental characteristics. As an instance of this problem, Dr. Dawson cited the confusion that has been created by the manifold definitions of mental defectiveness. According to the law, the feebleminded are "persons in whose case there exists from birth or from an early age mental defectiveness so pronounced that they require care, supervision, and control" ; but this description merely relates an undefined psychological state to equally undefined external circumstances. Ability to look after oneself and one's affairs without supervision obviously depends in large measure upon the nature of those affairs, and thus upon the social and physical environment—a proposition which leads to the curious conclusion that a man may be feebleminded in one environment and not in another. Dr. Dawson makes the ingenious suggestion that the increase in the incidence of defectiveness which has been attributed to a disadvantageous differential birth rate may in fact be due to the increasing complexities of civilized life, which make excessive demands on intellects that could have coped satisfactorily with the simpler conditions of, say, fifty years ago. The psychological definition of mental deficiency is hardly more satisfactory. It is based on a statistical convention that places the borderline of normality between the mental ratios of 60 and 80. But this apparent exactitude may be misleading, first, because none of the mental tests in regular use can differentiate ability from capacity with complete certainty, and, secondly, because, as Dr. Dawson pointed out, feeblemindedness may be due to a variety of genetic factors, and among its forms there may be some which are not distinguishable at all by means of intelligence ratios.

Genetical studies on the inheritance of ability and defectiveness have occasionally yielded useful information, but in many of them too much reliance "has been placed on rough-and-ready estimates based largely on social and professional success." One of the most carefully controlled studies in this class—*An Investigation into the Relation between Intelligence and Inheritance*,[1] by Dr. Evelyn M. Lawrence—supported the opinion that intelligence is hereditary and more abundant in the higher than in the lower social levels, but only with very material qualifications. In the first place, the difference between the classes, in circum-

[1] Cambridge University Press, 1931.

stances of equal environmental opportunity, did not appear to be very great, and in the second, the large number of low intelligences in the investigator's highest class, and the even more striking list of brilliant children in the two lowest classes, showed the hazardousness of generalizations about social classes as such. Dr. Dawson sums up the matter in the statement that the best-founded studies into the inheritance of intellect have shown "that bright parents have a higher proportion of bright children and that defective parents have a bigger proportion of defective children than do normal parents, but they have also shown that normal, even brilliant parents sometimes have defective children, that defective parents sometimes have normal children, and they suggest that the mental deficiency of children of either bright or dull parents may be due either to external causes or to defective inheritance. The main facts have probably been made out, but the details are lacking, and will not be available until exact measurements have been made of the mental traits of parents and their children under conditions in which social opportunities and encouragements are equal for all." His final conclusion, that the search for unitary mental traits "will demand the co-operation on a big scale, not only of psychologists, but also of biologists, statisticians, teachers, medical men, and others," gives a just indication of the immensity of the difficulties that must be overcome before the genetics of intellect are placed on a sound scientific footing.

THE CORONARY ARTERIES IN RHEUMATIC FEVER

Acute inflammatory changes have in the past been described as occurring in the coronary arteries, and involving all their coats, in a variety of general infections, including typhoid fever, diphtheria, influenza, scarlet fever, and septic and pyaemic diseases. Similarly, these diseases may produce degenerative changes in the vessels, but their connexion with arteriosclerosis or atheroma is not clear. Rheumatic fever is another infectious disease capable of producing arterial lesions, and the manner and frequency of these changes has been investigated recently by H. T. Karsner and F. Bayless.[1] They summarize the findings of other workers on the histological changes in the coronaries in rheumatic fever, and briefly consider the relation of these changes to myocardial damage, arteriosclerosis, and cardiac pain and arrhythmias, and then give the results of their examination of fifty-six hearts that showed typical rheumatic inflammation. Of the fifty-six cases investigated there was a history of rheumatic fever in forty-seven and of chorea in one—probably a higher proportion than one might get in this country from any large series of patients with rheumatic heart disease. The ages of the patients ranged from 2½ to 67 years, and sections of the coronaries revealed in all cases oedema and fibrinoid (an intensely acidophilic substance arranged in fibrillar fashion and found most often in the media), while in the majority there were chromotropic change and alterations in the elastica; necrosis was found with a frequency which increased as age advanced. Fibrinoid is said to be present in only a few other conditions, all of which may be of allergic origin. Infiltration of mononuclear cells and Aschoff bodies was a common finding in the adventitia, as was fibrosis in all coats of the vessels. Most of these changes were also observed in the controls, but these differed in certain respects: chromotropic change was not found, fibrinoid was inconstant, and there were differences in the elastic tissue changes and the cell infiltrations. It was concluded that thrombosis in the coronaries is not more frequent in acute rheumatism than in other severe infections. Intimal fibrosis, especially affecting the smaller arteries, was much commoner in the young rheumatic patients than in controls of the same age groups, and the authors consider that this change is responsible for the muscle damage of rheumatic heart disease rather than a primary injury to the muscle itself; in other words, it is better considered as the result of ischaemia than as a myocarditis. They believe that these arterial lesions undergo a sequence of inflammatory reactions analogous to those of the valves, and that these changes result in correspondingly severe effects upon the muscle. On the clinical side the authors consider that these pathological changes may explain the precordial pain which is sometimes a symptom in rheumatic carditis. Pain of anginal type is, however, very rare, apart from aortic incompetence; but on a few occasions thrombosis of a large coronary has been reported as occurring in young subjects with rheumatic hearts. The salient point which emerges from this investigation is, from the clinician's point of view, the suggestion that the muscle failure which ultimately supervenes in most cases of rheumatic carditis is due essentially to lesions in the coronary arteries. Formerly, increased mechanical load imposed by valve lesions, and less often by adherent pericardium, was thought to be the important factor in leading to failure in rheumatic heart disease, but it is now generally believed that a healthy heart muscle will stand up to an abnormally heavy burden—for example, in coarctation of the aorta—for very long periods of time. On this view the rheumatic heart with valve disease fails chiefly because of impaired muscle, and only a secondary part is played by the valvular lesion; but according to the conception of Karsner and Bayless this muscle impairment is not a direct one, and results chiefly from an ischaemia.

[1] *Amer. Heart Journ.*, June, 1934, p. 557.

UNDERNOURISHMENT AND UNEMPLOYMENT

The Children's Minimum Campaign Committee is publishing this week a further statement, *Evidence on Malnutrition*, by way of supplement to the memorandum on *The Scale of Needs*, which was submitted to the Unemployment Assistance Board on behalf of the committee by its chairman, Miss Eleanor Rathbone, M.P., in July last.[1] The earlier memorandum urged that the scales on which unemployment allowances are to be granted should be based on scientifically determined estimates of the expenditure needed to satisfy the requirements of healthy living. The present statement gives expression to "a widespread feeling, especially among those whose work brings them into direct contact with the children of the working classes

[1] *British Medical Journal*, August 18th, 1934, p. 311.

in their homes or in the schools, that there exists to-day far more undernourishment than the official reports suggest." A number of considerations are put forward, each of which, in the committee's belief, contributes to the apparent discrepancy between the official figures of malnutrition among elementary school children and the "acknowledged fact that large numbers of these children come from homes where, after rent is paid, the income cannot possibly admit an expenditure on food and clothing which is adequate according to any authoritative scale." The general trend of the pamphlet may be gathered from the first four side-headings: "Absence of a satisfactory standard"; "The standards adopted may be too low"; "Effects of underfeeding may be delayed"; "The condition of the unemployed masked by improved general conditions." The great importance of adequate and proper food in the first five years of a child's life is discussed in relation to the general problem, followed by reference to two mitigating factors—the self-sacrifice of parents and the provision of school meals and milk by local education authorities. A point stressed is the difficulty of determining the early signs of malnutrition. "The inadequate provision made by many local authorities and the limitations of the medical test, which may only discover damage when it is too late to repair it, make it impossible to regard school meals as a reliable corrective for an inadequate income in the home." Lastly, the committee gives its reasons for believing that unwise expenditure by poor mothers as a cause of undernourishment is much exaggerated. The pamphlet ends with extracts from medical officers' reports which give some support to the committee's arguments. Copies (price 4d.) may be had from Miss Marjorie E. Green at Room 116, Thames House, Millbank, S.W.1.

THE QUINTUPLETS

In an age when records are being broken in almost every sphere of human activity it is pleasing to find that not even feats of reproduction escape public notice. In the early hours of May 28th this year Mrs. Elzire Dionne, a young French Canadian living in a settlement two hundred miles north of Lake Ontario, gave birth to five living girls, who at the time of writing are believed to be alive and well, and for whom an English newspaper has already coined the term "The Quins." The *Journal of the American Medical Association* devotes more than three pages in its issue of September 1st to a first-hand account of this astonishing event, contributed by Dr. A. R. Dafoe, who, though he arrived after the birth of two of the infants, was present during the delivery of the remaining three. Dr. Dafoe's narrative reads like a fairy tale. With simplicity, humour, vividness, a charming modesty, and a directness of style which many might envy, he describes the acute confusion into which he was plunged on arrival at the Dionne home, the extremely efficient way in which he met the situation, and the epic struggles that were made to keep the infants alive—on May 29th their total weight was but 13 lb. 6 oz. He found the sole preparations for the confinement consisted of a tea-kettle boiling on the stove; "the father had disappeared" (later on in his account there occurs the phrase "the husband was still missing"); he was still sleepy from a previous obstetric case that night; and the whole situation struck him as "unreal and dream-like." The delivery over, the story continues with the separate baptism of the five children; the collapse of the mother, which resulted in his having to leave the midwife with her hand on the fundus while he hurried off on a five-mile journey to get the priest; the mother's recovery; the relays of heated blankets to wrap round the babies; the scientifically tragic loss of the placenta; and the gradual restoration of order out of chaos. Later he describes how they overcame the problems of feeding and the subsequent organization required for the six patients. Dr. Dafoe's article gives a graphic picture of the rugged and virile French-Canadian settlers in his district of 400 square miles, with their sturdy, simple, and law-abiding attitude to life, their hard working days lumbering in the winter, farming, road-mending, and working in saw-mills in the summer, and he also conveys a good idea of some of the difficulties in a practice where at certain times of the year the outlying areas are reached only with difficulty by sleigh. In a comment with which he concludes his notes occurs the artless statement:

> "The publicity in connexion with this case has been a serious problem, and has caused me considerable trouble and worry. There has been no let-up from the moment of the uncle's naïve inquiry to the North Bay paper as to how much it would cost to insert a birth notice for five babies born at one time. At first I resented what I felt was an intrusion into my private and professional affairs. Then I came to realize that I had no right to object to what had become a matter of Continent-wide interest."

So ends a vivid and intensely interesting account of this incredible affair. It is perhaps not an improbable prediction that somewhere about 1950 an immense fortune awaits the "Quins" when they make their *debut* in cabaret or music-hall. One can, in fact, without difficulty imagine that the more enterprising showmen are at this very moment falling over each other in an attempt to secure a life-contract for what—to borrow Dr. Dafoe's epithet—may prove to be a Continent-wide "draw." But whatever their future careers may show, we can join in his wish that the babies "will continue to thrive and will be a credit to their family and to their country."

THE DENTAL SURGEON'S PLACE IN A GENERAL HOSPITAL

Recent correspondence, a paper by Mr. Harold Round, and an editorial in the *British Dental Journal* indicate considerable dissatisfaction by the dental profession with the status of the dentist on the staff of the general hospitals. Writing from Birmingham Mr. Round tells how, after an interval of thirty years, he was appointed dentist to the Queen's Hospital, and how, step by step, he attained his ideal of a self-contained unit with beds and a resident dental house-surgeon. But he had to prove his worth, and the *British Dental Journal* calls him "the happy warrior," and reviews the position held by the dentist in the large general hospitals of this country. In some the dental department is an important element in the hospital economy; in others the dental surgeon, while in theory on a level with the

honorary staff, does in fact occupy a subordinate place. Other specialisms, our contemporary remarks, have had the same fight—and have won handsomely. Dentistry lags behind, and in seeking to account for this the journal suggests that lack of a full medical education and the reluctance of other members of the staff to give up beds are not inconsiderable factors. As regards the first point the suggestion is made that candidates holding the higher dental diplomas may answer it—though it may be legitimately asked whether these higher diplomas provide very much more of a medical education than the ordinary L.D.S.—while the second can only be answered when the general staff and the managing committee appreciate the full value and needs of a dental department. At present, say Mr. Round and the *British Dental Journal*, the dentist must prove his worth before status or accommodation is accorded him. This, we think, is quite wrong. Exactly the opposite should obtain. Status and accommodation should be there, ready for the suitable man. The value of dentistry to medicine brooks no denial; in many cases it is the only cure. Probably, in the medical mind, there will always be a swing of the pendulum between the point where every tooth is regarded as providing an "overload" of infection and the other extreme where dental sepsis is of no account; but in the ordinary practice of a general hospital there must always be a large number of cases in which the value of dental treatment is beyond doubt, and those who provide this treatment should be given the same status and facilities as other members of the staff. It should further be remembered that in addition to very considerable medical knowledge the dentist must possess mechanical skill of no mean order to deal with cases such as fracture, replacement of lost parts, radium applicators, etc. That the dentist should still be doubtful of his status seems to us to indicate that many medical men pay but lip service to the much-talked-of co-operation between dentist and doctor. We hesitate to suggest that they are ignorant of the pathology of dental diseases, but we strongly urge that only in a well-found dental department can the medical student hope to acquire the knowledge that will enable him to diagnose and assess at their disease value the dental conditions which he is bound to encounter in vast numbers in his life's work. And those from whom he gets his instruction should be under no stigma of inferiority.

CAUSATION OF SKELETAL MUSCLE PAIN

It is now generally accepted that ischaemia is the cause of muscular pain, such as occurs in angina pectoris and intermittent claudication, but the immediately responsible factors remain obscure. S. Perlow, P. Markle, and L. N. Katz[1] have conducted experiments on human subjects with a view to determining the underlying factors. They found that the immediate cause of continuous muscular pain, such as occurred when an ischaemic muscle was exercised, was not produced by a single mechanism, but that muscular activity, anoxaemia, circulatory stasis, and possibly other processes contributed to its production. Various degrees of generalized anoxaemias were induced in these subjects by letting the subject breathe from a spirometer containing various mixtures of gases at different times. Arm-clenching and leg-moving exercises were performed, complete ischaemia being brought about by inflating a sphygmomanometer cuff to a pressure considerably above the systolic. Circulatory stasis without complete ischaemia was produced by maintaining a pressure of 80 mm. of mercury in the cuff. The obstruction to the venous outflow led to the accumulation of blood in the limb. The observations consisted primarily in determining the time and circumstances in which continuous pain, as described by Lewis, Pickering, and Rothschild, developed, and the time and conditions under which it disappeared. It was found that exercise with circulatory stasis, but without anoxaemia, failed to produce pain in ten minutes in exercising leg muscles. Pain caused by exercise of both the arm and the leg during complete ischaemia disappeared after a short lag whenever the complete ischaemia was relieved, even if the exercise was continued and circulatory stasis was maintained. It seemed, therefore, that anoxaemia must be severe to become an important element in the production of pain in an exercising muscle during ischaemia. In the experiments, however, general anoxaemia failed to produce pain in ten minutes in the exercising muscles of the leg unless associated with circulatory stasis, extension of the foot being the exercise used. Stasis and anoxaemia were also found to be important in delaying the abatement of pain, even after the exercise had ceased. The authors hold that the pain-producing factor is a chemical substance which is formed during muscular metabolism and continues even while the muscle is at rest, though slowly. It was clearly possible to define a pre-pain stage, when the pain-producing substance was above normal but below the pain-producing threshold. Absence of pain, it is added, does not imply restoration of the muscle to normal.

[1] *Arch. Int. Med.*, June, 1934, p. 814.

NATIONAL INSTITUTE FOR THE DEAF

The development of the National Institute for the Deaf, since its reconstitution ten years ago, has been so rapid that the committee has been compelled to provide more commodious premises for its still expanding work. A fine freehold house, 105, Gower Street, London, W.1, has been secured, and the work of the institute will shortly be transferred thereto from the present offices, 2, Bloomsbury Street, W.C.1. The new premises and the necessary alterations and furnishing will cost approximately £12,000, and for this sum Lord Charnwood and other influential friends are now appealing to those of the public who sympathize with deafness and who desire sufferers from it to be suitably advised and helped. The committee has received some £2,500 of the amount required. A permanent centre of information and advice on deafness and the deaf is a national necessity, and, great as have been the achievements of the Institute in the past, there is no doubt that when it has the advantage of adequate and permanent accommodation its work will be of greater assistance to that large section of humanity whose ears are more or less closed to sound.

We regret to announce the death, at Stockholm, of Mr. W. H. Trethowan, F.R.C.S., orthopaedic surgeon to Guy's Hospital and surgeon to the Royal National Orthopaedic Hospital.

Nova et Vetera

THE HAMPSHIRE BOUNDARY IN THE VICINITY OF BOURNEMOUTH

Whilst those members of the British Medical Association who attended the Annual Meeting this year still have vividly in mind the geography of Bournemouth and the exceedingly interesting *Book of Bournemouth*, edited by the President and presented to us all by the generosity of the Borough Council, it may be useful to amplify slightly the references in Mr. Riddle's admirable historical sketch of the development of the town in early days. Refuting a common notion that the name Bournemouth is a modern innovation, he quotes a State Paper of 1574 which alludes to "Bournemouth, within the Hundred of Westover, adwyning to Dorsetshire." If "adwyning" means "adjoining," it would seem that Bournemouth was regarded as in Hampshire; if it means "adhering," then Dorsetshire claimed the honour. Or again, if someone could explain for us what the Hundred of Westover was, the problem might be solved; but the various ancient maps which I possess do not show the Hundred of Westover at all—they all concur in extending the Hundred of Christchurch right up to the county boundary on the Hampshire side, and the Hundred of Cogdeane on the Dorsetshire side: Camden gives a list of the Hundreds of Hampshire in which Westover is not mentioned. However, Westover Road is very much in evidence in the Bournemouth of to-day, so presumably Westover had a definite existence, whether or not it was recognized as a Hundred.

Mr. Riddle goes on to explain that "Burnemouthe" is shown on a MS. map of Dorset, now in the British Museum, as belonging to that county (in 1575), and says that Tresswell's map of 1586 and the map published with the 1610 edition of Camden's *Britannia* both place the Bourne stream wholly within the county of Dorset. I have not seen Tresswell's map, but I possess the map (by Kip) from the 1610 *Britannia*, and I interpret the cartographer as meaning that the Bourne is, near the sea, the actual boundary between the two counties, not that it is wholly in Dorsetshire. Saxton's map of Hampshire (1575) rather neglects this corner of the county, but it does show an unnamed stream (presumably the Bourne) definitely in Dorsetshire. According to Overton (1600) and Morden (1690), says Mr. Riddle, the stream was taken as the intercounty frontier.

Saxton's surveys were the earliest attempts at the large-scale cartography of England, and for some generations after his time publishers copied him freely; but they did extend his researches on their own account to some degree, and it is interesting to compare the various early delineations of the triangle of land enclosed between the sea front, the county boundary, and the River Stour. John Speed, for instance, in 1610 shows "Bascomb Copperas House" about two-fifths of the distance from "Allom House" (which is placed just on the Hampshire side of the boundary) to Hengistbury Head: copperas, if I remember rightly, is sulphate of iron, and allom is no doubt sulphate of aluminium. Due north of Allom House, and likewise just in Hampshire, a hamlet named Heath is shown; Iforde is duly, and fairly correctly, sited, and so is Holmhurst (now Holdenhurst). Longham is placed on the Dorsetshire side of the line and is thus spelt: in the Camden map of 1610 (itself a reprint of the original of 1607) it is also on the Dorset side, spelt Langham. Both show Perley well inside Hampshire, spelt Parlieu in Speed and Palieu in Camden; but oddly enough both authorities in their *Dorsetshire* maps place it in the identical situation but spell it in the modern way. Another anomaly shared by both these atlases is that they correctly place Preston in Dorsetshire in their maps of that county, but incorrectly include it in Hampshire when mapping the latter. These strange and identical blunders probably imply that they both copied some earlier authority (not Saxton, by the way); yet in some particulars they vary from each other noticeably. Thus Camden's mapmaker (John Norden in the case of Hampshire) gives Allom Copperas House, compared with Allom House in Speed, and he spells Boscombe "Boscambe," which is nearer to the modern spelling than Speed's version. He shows Burne mouth as two separate words (on the Dorset map in this case); between that place and Parkston he places "The mynes," presumably the iron deposits, or else the alum workings; which Speed also shows.

The great Amsterdam firm of the Blaeus evidently trusted to the English cartographers for this corner of Hampshire. They copy Speed with exactness, spelling Perley "Parlieu" as he does; placing Allom House just on the Hants side of the border, with Heath due north of it; and Preston also on the wrong side of the county line. Whether the Blaeus sited Preston properly on their Dorsetshire map—as Speed and Norden did—I am unable to say, as I have only their Hampshire map before me. It is, however, clear that they copied Speed, not Norden. Thus, they follow Speed in regard to Iford, which Norden calls Iverbridge—Iver being, no doubt, a phonetic spelling of Iford. They also place Heath in the exact position that Speed does, whereas Saxton and Norden omit it altogether. Is this hamlet, I wonder, the district now called Highmoor?

I ought to add that, as those who have read the *Book of Bournemouth* know, the whole town is nowadays in Hampshire; but at what date the boundary was redrawn I am unable to say, and Mr. Riddle does not tell us, though I feel quite sure that he knows. H. R.

England and Wales

Bequest to Oxford University

A large sum of money—£30,000—has been left by Mrs. Mary Jane Williams of Witley, Surrey, to the Chancellor, masters, and scholars of the University of Oxford, to be expended in the promotion of Oxford medical education. The benefactress, who was the widow of Charles Theodore Williams, M.D., F.R.C.P., consulting physician to the Brompton Hospital, died on July 24th. Her husband died in 1912. A further £5,000 is left to the Royal College of Physicians of London, to be devoted to the exercise of hospitality and to the maintenance of the dignity of the College. Other legatees are the Master and Fellows of Pembroke College, Oxford, "in token of my husband's great affection for and desire to assist the college, of which he was an honorary fellow, to found fellowships and scholarships, or for building or endowments, or in other ways to promote the prosperity of the college which was dear to him." Sums of £100 each are bequeathed to the London Society for Women's Service, to the Medical Society of London, and to the Royal Meteorological Society. An Oxford correspondent writes: Pembroke College—originally Broadgates Hall—was founded in 1624 by James I. Dr. Thomas Clayton, Regius Professor of Medicine, was the last Principal of Broadgates Hall and became Pembroke's first Master. The college still preserves some relics of Samuel Johnson, who entered it in 1728.

Institute of Medical Psychology

Post-graduate courses in psychotherapeutic theory and method for members of the medical profession will begin on October 1st at the Institute of Medical Psychology (the Tavistock Clinic). During the first five weeks there will be ten introductory lectures, after which the main course, covering a year's work, will be arranged to suit alternate groups of those aiming at specialization and those able to devote only a more limited amount of time to the subject. Fees range from two guineas for the introductory course to £60 for the "specialist" course. Full particulars can be obtained from the honorary lecture secretary, Institute of Medical Psychology, Malet Place, W.C.1.

Lectures on sectional or more popular lines have also been arranged for doctors, nurses, educational and social workers, the clergy, and the general public. One series will deal with "Psychology and Modern Problems," the lecturers including the new Dean of St. Paul's (Dr. W. R. Matthews), Professor C. G. Seligman, Professor Morris Ginsberg, Professor J. C. Flugel, and Dr. H. Crichton-Miller.

Scotland

Health and Housing

The sixtieth annual Congress of the Royal Sanitary Association of Scotland was held last week in the Albert Halls, Stirling. Mr. A. W. Ritchie, chief sanitary inspector, Edinburgh, in his presidential address, said that the housing conditions existing at the middle of last century were part of the unhappy consequences of the industrial revolution, which caused great numbers of people to flock into larger centres to find employment in the mills. These old buildings were erected with no regard for arrangement or for the most elementary sanitary requirements. As a consequence the death rate in 1876 was 20.9 per 1,000 of the population, as contrasted with 13.2 in 1933. The modern tendency in housing was towards simplification and economy without loss of security. Concerning sewage disposal, he said that remarkable developments had taken place in purification works, but it was regrettable that so many rivers still remained grossly polluted. Inquiries in this connexion, however, were being conducted by the Department of Health. The results following the transfer of slum dwellers to clearance areas had demonstrated beyond a doubt that improved environment was a very important factor in the furtherance of health and happiness. It was a mistake to suppose that these persons reduced their new dwellings to a level with the old; the proportion who failed to respond to the new surroundings was not more than 4 or 5 per cent.

Campaign against Tuberculosis

At the meeting on September 13th a resolution was unanimously adopted calling upon the Government to introduce legislation in the forthcoming Housing Bill for the rehousing of families in which tuberculosis was present. In the long discussion which followed on the campaign against tuberculosis, Councillor Mrs. Mann said medical opinion agreed that too much money was being spent on the treatment of tuberculosis and the development of sanatoria, and too little on housing with the same objective. In Glasgow, where £500,000 had been spent on the prevention and cure of tuberculosis, patients were brought back from sanatoria to sleep in one-apartment houses with six, seven, or eight other persons. It was an anomaly that thousands of slum dwellers might be removed and qualify for the grant of £2 10s. per head, but not even two tuberculous patients from an overcrowded area could be removed to obtain this grant, because there was no Act under which this could be effected. Dr. R. J. Peters, senior assistant medical officer of health in Glasgow, said that tuberculosis of bovine origin was a serious matter, but the type of infection which took origin in the human subject was more serious still. Science had put into their hands knowledge of the means of prevention of bovine tuberculosis, and it seemed strange that the lives of children were still being menaced by this disease. During the past twenty years much had been expended upon the control of tuberculosis. In England over £3,000,000 of public money was spent annually in this cause. In Glasgow the amount spent was relatively higher; on an average each case of tuberculosis cost the ratepayers of that city about £100 for treatment and supervision. Newer methods of treatment of pulmonary tuberculosis had altered the views of clinical officers on the question of admission to hospital, and the improvement in social conditions had rendered the need for extensive isolation less urgent than before. The sanatorium and the local authority hospital had had one drawback in an unfortunate measure of divorcement between tuberculosis and general medicine. Those who were occupied with tuberculosis work did not come into contact with workers in other fields of medicine as freely as they should, but this could to some extent be remedied by allowing a few cases to pass through the voluntary general hospitals. Dr. J. P. Dunn, medical officer of health for Dumfries, pointed out that although the incidence of tuberculosis was declining, it was still killing 30,000 people every year, and costing the nation over £2,000,000 in residential treatment alone. In Britain every year 2,000 children died from infection with bovine tuberculosis, and some 4,000 suffered permanent crippling. Major J. G. McGregor, county veterinary officer, Stirlingshire, said that the incidence of bovine tuberculosis among milk cows was very high, for at least 40 per cent. of all the dairy cows in the area of the Scottish Milk Marketing Board would react to the tuberculin test. The number, however, that excreted tubercle bacilli in their milk was small; it was estimated that only about 0.5 per cent. of cows yielded tuberculous milk. The incidence of tuberculous infection in raw milk had been found to be in the neighbourhood of 10 per cent. of samples, but Certified and Grade A (T.T.) milk had been shown, in an investigation by the Department of Health, to be practically safe. Pasteurization of all other milk had been suggested as a solution of the problem, and the Medical Research Council had come to the conclusion that if this was properly carried out it had no seriously damaging effect upon the nutritive qualities of the milk. Mr. W. Y. Park, sanitary inspector, Rutherglen, speaking of the conditions which favoured the onset of tuberculosis, mentioned, in addition to poor housing conditions and infected milk supply, the atmospheric pollution of towns. There was no law against domestic smoke, and yet three-fourths of the total atmospheric pollution was due to the house chimney. In the opinion of Dr. McMichael, Paisley, there was a clear necessity for a definite policy on the question of housing tuberculous families in industrial areas. Investigation during the last five years into the sleeping accommodation of 754 tuberculous persons showed that 63 per cent. shared a bed, 21 per cent. occupied a bed alone but shared a room, and only 15 per cent. were the sole occupants of a room. In the light of such conditions the local authority of Paisley had some years ago decided to make a special effort, and had rehoused 182 tuberculous families, or 20.9 per cent. of all the cases on its register.

Mental Health Services

On September 14th a discussion was introduced by Professor D. K. Henderson, physician-superintendent of the Royal Edinburgh Mental Hospital, upon a modern mental health service. He said that the maintenance of mental health in the community was one of the greatest outstanding problems. This problem was concerned with several well-defined groups, including: (1) the mentally disordered, who spent part of their lives in mental hospitals; (2) the mentally defective, of whom many remained in institutions throughout life; (3) the delinquent and criminal, of whom a number suffered from mental disorder, while others required investigation to fit them for social life; (4) the border-line psychoneurotics who might be

dissatisfied, hysterical, neurotic, or anxious, and were in need of help and treatment ; (5) unsatisfactory individuals who were social misfits, including drug addicts, alcoholics, prostitutes, and many of the unemployable. In England and Wales there were about 150,000 mentally disordered persons, with 20,000 more in Scotland, while mental defectives approximated to 8.56 per 1,000 of the population. In London about one person out of 200 was mentally deranged, and one person out of 274 was a mental defective. In Scotland, according to the General Board of Control, since 1858 the number of insane persons had increased by 235 per cent., while the population had increased by only 62 per cent. These figures were bad enough, but they would be still more appalling if they included all those seriously disordered persons who were maintained outside institutions, but who would benefit by greater supervision. Yet great advances in control had been made, and in Great Britain the mental hospitals caring for both rate-aided and private patients were second to none. Alarmists raised a cry for some all-embracing destructive policy which would solve the problem at one swoop. Such a policy was unthinkable and contrary to humanitarian instincts, and was dominated by fear. The continued policy of building more and larger institutions was also something which should be obviated. There must be a limit to segregation combined with training and employment, and the matter must be met on a wider and more constructive basis. While sterilization might be adopted in individual cases, its usefulness was more individual than racial, and there were so many pitfalls and complexities associated with it and so many cogent arguments against it that its use would be extremely limited. A positive eugenic policy, on the other hand, was an attempt to increase the number of children above medium intelligence by encouraging the growth and development of healthy families. To obviate the economic aspects of this, a scheme of family allowances had been suggested whereby parents should receive financial support for healthy children. To-day provision was made for the unemployed and unemployable, while little or nothing was done for the people on whom the welfare of the nation depended. In the meantime they must apply themselves to the study and treatment of those who were unable to adjust themselves to the artificial standards of society. Most of the trouble started in the cradle and the nursery long before school age. If the difficulties of nervous, highly strung, sensitive, and wayward children, who were socially unable to form satisfactory adaptations, were not corrected in childhood, they would never be corrected at all. Efforts should be made at this formative period to pluck out the roots of budding trouble by the co-operation of parents, teachers, ministers, social workers, school medical officers, and specialists. Many clinics for this purpose were in existence, and the speaker would like to see these co-ordinated and extended ; at present there were too many working independently and covering much the same ground. The clinics dealing with the nervous and mental health of the child might well be grouped at the children's hospitals. Every mental hospital in the country ought to organize in its county town or other centre an out-patient clinic to which patients could have easy access. Further, a psychiatrist should be attached to juvenile courts ; he might be helpful to many early offenders. Psychiatric clinics should be established, which would provide indoor and outdoor treatment for patients who needed careful observation and treatment, but who were not yet so seriously involved as to require the aid of a mental hospital. Dr. W. McAlister, medical superintendent of Bangour Village Asylum, referred to the fact that this was the first occasion on which the Sanitary Congress had had a discussion on mental health. He congratulated the association on lifting its eyes from the dismal subject of drains to the more salubrious subject of brains, for in doing so it was coming into line with the great mass of the public whose conscience had been roused in this matter. In the last twenty-five years there had been a partial revolution against the ravages of mental disease. Local authorities, however, had not sufficiently taken advantage of existing legislation, for the Mental Deficiency Act of 1913 called upon them to ascertain the mental defectives within their own area, to arrange for special schooling for those who could profit by it, to provide institutional care for those who required it, and to assume control over defectives who were at large in the community. In Scotland in some counties the number of mental defectives had not yet been ascertained, and therefore the other three demands could not be fulfilled. He believed also that the medical profession was to blame, for they had allowed themselves to continue working under old traditions instead of stepping in at the early nervous stage and dealing with matters during formative years. Much research was required in mental disease which ought to be organized on a national scale. The key to the whole situation lay in the child, and all schools of psychology were now agreed on the supreme importance of early years. Dr. William Boyd, medical superintendent of Fife District Asylum, stated that the present fast pace of life was leading to a greater development of mental troubles. The Lunacy Act required to be altered in the direction of making asylums more of the nature of hospitals, and of removing the difference between pauper patients and others. Dr. Macgregor, medical officer of health for Glasgow, said that in regard to eugenics they must have more facts and more information. In Glasgow special wards were being created in the general hospitals which really amounted to psychiatric units, where, in addition to a study of early cases of mental disorder, all the medical and surgical skill in the institution was available. He believed this was the proper line on which such psychiatric units should develop.

Reports of Societies

ACUTE STREPTOCOCCAL THROAT INFECTIONS

On September 15th, in connexion with the two-day jubilee celebration of the Medical Officers of Schools Association held at Eastbourne, by invitation of the Mayor and Corporation and the Local Head Masters' Association, and under the presidency of Dr. J. A. H. BRINCKER, a paper (contributed conjointly by himself and Dr. FRED GRIFFITH) was read at the Town Hall by Dr. J. ALISON GLOVER, Senior Medical Officer, Board of Education, on "Acute Streptococcal Throat Infections."

Dr. Glover said that this subject was of perennial importance to both head master and school medical officer, as these infections of the throat constituted a continual source of anxiety. The most prevalent streptococcal disorder met with in schools was acute tonsillitis: it was both endemic and epidemic, and had an incubation period of two to four days. Its main incidence occurred at puberty, and while it was sometimes conveyed either by drinking milk or by the common use of tableware, handkerchiefs, or pencils, droplet infection was the usual method of transmission in schools. With the exception of the Klebs-Loeffler bacillus, the almost invariable causal organism in sore throat was the haemolytic streptococcus (*S. pyogenes*). The attack rate varied. It was 2.7 per cent. annually (1932) in the Royal Navy ; at Guy's Hospital, taken over a series of years, 6.7 per cent. of those attending the casualty department for the first time came on account of it ; while Captain Dudley found an attack rate of 4.8 per cent. per term at the Royal Hospital School, Greenwich. Its seriousness was largely derived from the various complications which might ensue, such as otitis media, mastoiditis, meningitis, septicaemia, and pneumonia, and, more rarely, acute rheumatism and

CORRESPONDENCE

Stanley Melville Memorial

SIR,—The dangers of *x*-ray work were brought home vividly to the medical world by the death of several of our pioneer radiologists. In 1921 a letter to the *Times* announced the formation of a special committee to advise on these dangers. In this action the late Dr. Stanley Melville played a very prominent part. This *X*-Ray and Radium Protection Committee was the first in the world to draw up recommendations for safeguarding those who work with these agents. Their value may be gauged by the fact that they formed the basis of the recommendations adopted at the Stockholm International Radiological Congress in 1928.

Dr. Stanley Melville took a most important but unobtrusive part in all that concerned medical radiology. He was one of those who worked for the establishment of the Diploma in Medical Radiology and Electrology (D.M.R.E.) at Cambridge in 1919, and subsequently the teaching and examinations connected with it were his constant care. The bilingual congress of 1922 and the First International Congress of Radiology in London in 1925 were largely due to his initiative, as was also the formation of the British Institute of Radiology, with which the Röntgen Society was eventually incorporated. He did much for the welfare of the lay worker, and took a prominent part in founding the Society of Radiographers. Sadly handicapped physically, and often suffering as the result of dermatitis incurred in the early days, Melville never spared himself when any work for medical radiology had to be done; that he should be ever ready to step into the breach seemed to be the natural course of events.

Some of your readers may feel that his services should be recognized and perpetuated by a suitable memorial, such as a travelling fellowship in radiology. Donations, however small, for the purpose will be gratefully acknowledged. At a later date a meeting of those subscribing to the fund will be called in order to decide what form the memorial shall take and how the funds subscribed shall be administered.—We are, etc.,

HUMPHRY ROLLESTON (*Chairman*).
RUTHERFORD (Cambridge).
L. S. T. BURRELL (Brompton Hospital).
G. W. C. KAYE (National Physical Laboratory).
G. W. MITCHELL (St. George's Hospital).
R. S. PATERSON (Radiology Section, Royal Society of Medicine).
LEO. A. ROWDEN (Society of Radiographers).
SIDNEY RUSS (British *X*-Ray and Radium Protection Committee).
J. DUNCAN WHITE, A. E. BARCLAY (British Institute of Radiology) (*Honorary Secretaries*).

32, Welbeck Street, W.1, Sept. 14th.

Preliminary Ligature in Toxic Goitre

SIR,—It is clear from the correspondence in the *Journal* of June 30th, July 14th, 21st, and 28th, that there is a considerable divergence of opinion on the advisability of preliminary ligature in cases of toxic goitre. While Sir Thomas Dunhill, Professor Wilkie, and Mr. Geoffrey Keynes favour the ligature procedure, Mr. Cecil A. Joll takes a much more guarded view.

It will be agreed that the best means to ensure a low mortality is to leave so little thyroid tissue that severe post-operative reactions cannot occur, and this involves removal of about seven-eighths of the gland in the majority of cases. In the very toxic patients, although it may be unwise to carry out this operation in the one stage, I think, nevertheless, that at least a large portion of one lobe should be removed under these circumstances; and the post-operative reaction will depend, to a great extent, on how much thyroid is left behind. I believe that the ligature operation cannot be relied upon to reduce to any great extent the amount of active gland, and for this reason the first stage of the operation in a very toxic case should include more than simple ligation of the vessels.

That these views are not without support is evident from a study of the literature on the subject. H. M. Richter, in *Surgery, Gynecology and Obstetrics* (vol. xlix, p. 67), reports a series of 500 consecutive cases of toxic goitre subjected to operation with one death only. He is of the opinion that preliminary ligation should *not* be done, and aims at carrying out the operation in one stage only. A series of cases so successfully dealt with cannot be ignored. Again, Greene and Mora (ibid., 1931, vol. liii) report 1,025 consecutive thyroidectomies for toxic goitre in one-stage operations with a mortality of 0·29 per cent., and also a series of twenty-six cases in children in which a one-stage operation was performed with no deaths. The preliminary ligation method is not practised by them. F. H. Lahey, in the *New England Journal of Medicine* (1929, p. 909), basing his views on over 4,000 cases of toxic goitre, makes the following statement:

"Due to the preliminary use of iodine, multiple stage operations which we have previously advocated have markedly diminished in number, and when done are now limited at the most to a two-stage procedure, the partial removal of one lobe, the patient returning to hospital at the end of six weeks for the partial removal of the remaining lobe."

In 1924 fifty-seven operations for preliminary ligature were carried out in the Lahey clinic, but since then the operation is no longer regarded with favour, and in 1928, although there were 618 operations for toxic goitre, in no case was preliminary ligation considered advisable, and yet there was only one death in this group. In this country W. H. C. Romanis (*British Medical Journal*, January 21st, 1933, p. 87), reporting on 900 cases with a mortality of 2.5 per cent., recommends a two-stage operation, if the patient is exceedingly ill, in which one lobe is removed on the first occasion and part of the remaining lobe later. He does not support the operation of preliminary ligation.

Mr. Cecil A. Joll very rightly points out that:

"it must not be forgotten that, minor operation as it is, preliminary ligation has an appreciable mortality, and there is by no means a negligible minority in which the operation either aggravates the progress of the disease, or at any rate entirely fails to check it."

The risks are illustrated in an article by H. L. Wallace and L. B. Wevill in the *Edinburgh Medical Journal* (December, 1933), who report fourteen cases of preliminary ligation with three deaths; two of which occurred in severe cases and one in a mild case, death being due in this case to haemolytic jaundice. Mr. Geoffrey Keynes, although an exponent of the operation, used preliminary ligation in only eight of his series of 220 cases of toxic goitre. One of this group of eight died; he gives details of four of the remaining seven cases in his article of May 12th on "Avertin Narcosis," and certainly in two considerable improvement took place within a few days of the operation. This happy result was not experienced with the other two, one of whom barely survived the reaction following the operation, and the other, in spite of ligature of all four thyroid arteries, remained in a very serious condition with no improvement. In both of these cases it is interesting to note that, although the patients had in no way benefited by ligation and were very gravely ill, yet both these cases responded very satisfactorily to a two-stage operation consisting of removal of one lobe

of the thyroid, followed later by removal of part of the remaining lobe. Thus of Mr. Keynes's eight cases, five were benefited by the operation, one died, and two received no benefit whatever, but nevertheless were later very successfully dealt with by excision of part of the gland.

In conclusion, I think there is good evidence to show that the more direct method of dealing with these cases by removal of at least a portion of the thyroid gland, should a two-stage operation be necessary, can be carried out with an extremely low mortality, and that preliminary ligation is a procedure which is associated with a grave risk in return for an uncertain result. I regret that Dr. Cunningham and I did not make it clear in our letter in the *Journal* of June 30th that in adult patients permission for operation is obtained during the early stages of the preliminary medical treatment, but that, once obtained, the subject is not discussed with the patient again, so as to avoid, as far as possible, unnecessary worry on his part. We are, of course, in agreement with Dr. Harold Cookson when he points out that it is illegal to operate without permission on a patient under 21 years of age unless certified insane. In Taylor's *Principles of Medical Jurisprudence* (eighth edition, vol. i, p. 109) it is stated that "no surgeon has a right to perform any operation against the will of the patient as long as the patient preserves consciousness and will." Possibly in some cases of very toxic goitre the terms "consciousness and will" might reasonably be interpreted to allow of an operation being performed without the patient's consent if the relatives are willing, but so far we have always obtained the patient's consent.—I am, etc.,

Liverpool, Sept. 13th. PHILIP HAWE, Ch.M., F.R.C.S.

Medical Education

Training for the Specialties

SIR,—Many thinking practitioners will find themselves heartily in agreement with the views expressed by Mr. Keith Monsarrat in your issue of September 8th (p. 486) and hope that further consideration may induce the powers that be to adopt his scheme rather than that which found favour with the majority of the Committee on Medical Education.

But if it is desirable that the medical graduate should have the benefit of a period of responsible clinical experience before taking up the duties of public practice I submit that it is almost equally important that no graduate should be permitted to embark on specialist and consultant practice without previous experience in general practice. My own observation and experience lead me to think that there are far too many so-called specialists for the health of the specialties and, it may be, also for the health of the public generally. Most men of experience will agree that it is impossible to deal adequately with any pathological condition of specific organs without consideration of the general health of the patient, and that the object of treatment should be directed to the patient suffering from the disease and not the morbid condition of one organ as though it were the only or even the chief consideration. The necessary experience can only be obtained in general practice, and it would, I believe, be greatly to the advantage of both our profession and our patients if some regulation could be devised to prevent anyone taking up a specialty until he had spent three years at least in an ordinary family practice. It might perhaps be made a condition for the M.R.C.P. or the F.R.C.S.

At present it seems as though any bright lad who has won a prize or two in his student career thinks himself too good for general practice either through his own vanity or the flattery of foolish relatives or friends. One parent told me that he would not let his son become a doctor unless he could be a specialist. Such an outlook indicates that the object in view is to make money and secure a good social position, which is perhaps not infrequently the incentive rather than to "scorn delights, and live laborious days." Of course, I do not for a moment suggest that there are not examples of the latter outlook, and brilliant ones too, among the ranks of specialists, but the holders of the former point of view will never achieve the highest satisfaction that the practice of medicine can give.

It would be possible to adduce many more forcible arguments in support of my thesis, but they are more suitable for discussion *in camera* than in the Press. Many of the problems which faced the Central Ethical Committee in drawing up rules for consultation would not arise if some such regulation of specialism as I have indicated could be put into practice.—I am, etc.,

Derbyshire, Sept. 16th. AN OLD GRADUATE.

B. coli Infections

SIR,—Professor Murray Lyon in his address (*British Medical Journal*, September 8th, p. 455) has dealt in a masterly way with this subject of everyday importance. His references to modern thought on this matter are very stimulating, but at the same time the views he has described would appear to be conflicting.

1. "The bile, though alkaline, is an excellent culture medium for the colon bacillus and similar organisms."

Why should the colon bacillus flourish in this alkaline medium when the best measures for eradicating it are massive doses of alkalis?

2. "Hurst has pointed out that where achlorhydria is present the contents of the duodenum are more alkaline—a condition favouring the growth of organisms."

And yet we give large doses of alkali to inhibit this growth! It would appear that the colon bacillus flourishes in an alkaline state of the bowel, but prefers a highly acid state of the urine.

3. "Excess fat in the diet favours penetration of the bowel wall by organisms; butter and eggs are therefore usually restricted."

Wherein, then, lies the value of a ketogenic diet, which contains large quantities of fat? That this diet has proved useful in clearing up many cases of chronic *B. coli* infection of the urinary tract (the primary focus being, as always, the bowel) there can be no doubt.

4. "Calomel in non-purgative doses is probably as useful a drug as any."

And yet its action is to increase the flow of bile, which, as has been said, is an excellent culture medium for the colon bacillus.—I am, etc.,

C. GORDON STRACHAN, M.B., F.R.C.P.Ed.

Cheam, Surrey, Sept. 12th.

Increased Mortality from Diabetes

SIR,—With regard to the recent increased mortality from diabetes it has been suggested that it may not be a real increase, but may be due to the misleading character of the mortality statistics for this disease. It is well known that since the advent of insulin, owing to the greater activity in the routine examination for sugar in the urine and blood, many more diabetics have been discovered; but it does not necessarily follow that that means an increased mortality.

James Raglan Miller refutes this, as far as the U.S.A. statistics are concerned, in an article in the *New England Journal of Medicine* (ccviii, 490). He makes the statement that

"... the modern treatment of diabetes has reduced the number of deaths to such an extent that diabetes can now be considered as scarcely more than a serious handicap." And continues: "It is common knowledge that patients who have diabetes do not at present die because of their diabetes: diabetes, perhaps more than any other condition, seldom appears alone on the death certificate. Before the use of insulin it was in truth a frequent primary cause; in other words, it was diabetes which killed the patient. To-day it is frequently merely a condition which the patient is known to have had—a handicap, which even to the point of death is under perfect control."

Referring to death certification, Dr. Miller tells us that the "Manual of Joint Causes" is peculiar to the United States, being issued by the Central Bureau to regulate in a uniform manner the tabulation of deaths according to a definite scheme. He states:

"It will surprise most physicians to learn the extent to which diabetes takes precedence over other causes of death which appear on the death certificate. If diabetes is mentioned even as a secondary cause, together with any of the diagnoses in the following list, it will get the credit of causing the death."

He refers to a list of 113 diseases, including the following: erysipelas, encephalitis lethargica, acute rheumatic fever, epilepsy, lobar pneumonia, appendicitis, acute nephritis, pericarditis, and other diseases of the heart. He further claims that there is ever present in vital statistics, and from the beginning always has been, an attempt to make the incidence of mortality a measure or index of the incidence of morbidity.

Is it not possible that in recent years, in our own country, owing to the great attention that has been focused on diabetes and glycosuria, once the condition has been diagnosed in a patient, especially one of mature years, the fact is not forgotten: should the patient die from a condition wholly unrelated to diabetes, the glycosuric condition nevertheless finds mention on the death certificate, and thus a condition of morbidity becomes a cause of mortality?—I am, etc.,

Bramhall, Cheshire, Sept. 17th. ALEX. FRASER.

Treatment of Fractures in the Newborn

SIR,—The annotation in your issue of August 25th (p. 363) discussing Drs. Eric Pritchard and Jean Smith's views on the treatment of fracture of the femur in the newly born, states that "the traditional method of dealing with neo-natal fracture of the femur is to bandage the thigh against the abdomen in the 'foetal' position. Nursing becomes very complicated in these circumstances." In July, 1908, after reading an account of twenty fractures of the thigh in the newly born, related by the late Sir Robert Jones, in all of which mal-union had taken place, I explained the treatment which Drs. Pritchard and Jean Smith describe as in the "foetal position." My article distinctly stated that the fractured leg comes to lie on the opposite side of the body; this is not in the foetal position. In my two cases related, the nursing, instead of being complicated, was so simple that one child, when the treatment had been applied, was placed on a pillow and two loose bandages applied round the pillow and child. The broken leg was out of the way, and the mother, raising the pillow on which the child lay, gave the child the breast. Another case subsequently was attended by a friend of mine in Belgium. He reported that the result was perfect and the nursing easy. In all these cases the treatment was the essence of simplicity and the results all perfect.—I am, etc.,

Bolton-le-Sands, Sept. 12th. JOHN EDMONDSON.

Peribronchial Tuberculosis

SIR,—In the *Journal* for September 8th (p. 461) Dr. Douglas Webster mentions—as an instance of diagnostic error—the fact that hundreds of recruits for the armies of Great Britain and America were wrongly rejected because of the confident radiological diagnosis of "peribronchial phthisis." This was twenty years ago: more recently (in May, 1927) a writer in the *American Journal of Roentgenology* was so incensed at the continuous stream of "well" patients sent into his sanatorium that he would hear of nothing less than the total abolition of the term "peribronchial tuberculosis."

Since I was the originator of this term (*Practitioner*, February, 1912, and *British Medical Journal*, August 31st, 1912), I hope you will be good enough to allow me a word of explanation. My thesis was a clear one, and, I think, expressed a rational and common-sense view. Finding (as I did) that pulmonary tuberculosis did not begin, as previously held, at the apices of the lungs but in the middle portions of the chest, opposite the roots—in a region where no physical signs could be made out in the early stages—I published my conclusions that pulmonary tuberculosis originated ordinarily as a catarrhal bronchitis and bronchiolitis. This earliest stage gives no *x*-ray signs, but it prepares the way for the all-important second stage. The walls of the small air tubes, having shed some of their lining epithelium, are no longer impervious to microbes, some of which (tubercle bacilli among them) pass through the weakened places into the peribronchial tissues, where leucocytes begin to assemble in groups for the purpose of dealing with them. These constitute the "fine mottling" which is the earliest *x*-ray sign of active disease. After this, one of three events may follow: (1) complete resolution and disappearance of the *x*-ray mottling; (2) healing by fibrous tissue formation, shown by widening and darkening of the linear shadows that radiate from the roots; (3) advancing disease—the "mottles" coalesce into blotches, then follow the advanced stages of caseation, ulceration, excavation, etc. While disease is advancing in the peribronchial tissues the glands at the root are gradually enlarging, as would be expected, seeing that the microbe-infected region is increasing in extent.

All this seems simple and rational and hardly open to controversy; but strangely enough the idea went abroad that pulmonary tuberculosis had been proved to start in the bronchial glands and spread from them along the air tubes—as soon would I have asserted that a "poisoned" finger started in the axillary glands and spread thence to the finger! Several writers invented theories to explain the remarkable phenomenon. The late Dr. R. Murray Leslie, for instance, invented the term "retro-pulsion of lymph" to explain it! Worse was to follow: for radiologists throughout the world began diagnosing peribronchial tuberculosis whenever they found dark blotches at the roots and "fibrous" bands radiating from the roots along the air tubes. I protest my innocence of blame for this. In my papers I drew special attention to these appearances in "healthy" chests, and explained them to be Nature's way of overcoming chronic microbic infection of the lungs. Further, I insisted that *mottling* was the only positive sign of active disease of the lungs.

Is mottling always tuberculous? Twenty years ago the answer was an unqualified "Yes"; to-day the reply is,

"Not always at first." The microbic invasion of the peribronchial tissues and the influx of leucocytes that follows (giving rise to mottling) is, I am convinced, nearly always micrococcal. Whether, and how soon, tubercle bacilli arrive there and begin to multiply depends on individual susceptibility to tuberculosis, and this may be inborn or acquired, or both—a fatal combination! Acquired susceptibility to tuberculosis, again, may be local or general. By "local" I mean that a chronic micrococcal infection of some portion of the lung impairs the resistance of that portion and renders it unnaturally susceptible to tuberculosis. By "general" I mean that a general toxaemia renders *all* tissues of the body prone to attack, since the toxaemia depreciates their natural resisting powers, and wherever tubercle bacilli lodge they are able to multiply and gain a firm foothold.—I am, etc.,

ALFRED C. JORDAN, M.D.,
M.R.C.P., D.M.R.E.

London, W.1, Sept. 10th.

Pineapple Juice in Oedema

SIR,—I was much interested in the letter on the above subject in the *Journal* of September 8th (p. 492). During an outbreak of beri-beri in the gaol at Kuala Lumpur, Federated Malay States, in the years 1896 to 1898, the Chinese patients with dropsy invariably asked for pine-apple. They said it was good for reducing the swelling. Their request was granted as a placebo, although I thought at the time it might act as a diuretic. The dropsy subsided, but, as they were given other diuretics, I could not attribute its disappearance entirely to the pineapple. I may state that Chinese patients suffering from dropsical beri-beri in other State hospitals also always asked for pineapple.—I am, etc.,

A. J. McCLOSKY, M.D.
Retired Senior Medical Officer, Selangor, Federated Malay States.

London, W.13, Sept. 17th.

"Port Sanitation and Common Sense"

SIR,—"Port Medical Officer" (September 8th, p. 491) has not perceived that my criticism of port authorities is almost entirely directed against *foreign* ones. He cannot have had much experience of these individuals, especially the Mediterranean and South American varieties, each of whom sees himself as a petty Cerberus in charge of the national safety, and to whom the mention of *any* kind of illness (even accidents!) arouses visions of dread epidemics, the ship being regarded as a sort of dung-heap which must forthwith be "disinfected" at a heavy charge to the owners.

In British ports a standard health questionary now at long last prevails in which the question, "Have you had any cases of illness on board whether of an infectious nature or not?" does not occur. "Port Medical Officer" does not see that I was referring here to cases which have occurred during the early part of a voyage *and have since completely recovered*. Why should the ship surgeon almost always be regarded as ignorant or inexperienced in regard to such cases of minor illness? Or, if he must be so regarded, why is no supervision exercised over the general practitioner ashore? Surely he is just as likely to miss ambulatory cases of small-pox, gonorrhoeal sequelae, and typhoid fever as the ship surgeon. What of the port medical officer himself? Is *he* entitled to claim medical omniscience?

Speaking from over ten years' sea-going experience in all parts of the world, I would say that the vast majority of these minor maladies are found to be mares' nests in regard to their danger to the community. In regard to the remainder, it is sad to relate that British law, being the ass that it is, is sometimes woefully lacking. Witness the *Tuscania* affair. This ship landed a case of small-pox at Marseilles homewards. On arrival at Liverpool, though obviously contacts were on board, the ship could not be quarantined in the absence of actual cases. The result was a small epidemic ashore. Surely this requires amendment.

I trust that "Port Medical Officer" will not consider my remarks as directed against himself or other officers in British ports, whom I have almost invariably found sensible and friendly. It is the crass futilities and absurdities of foreign port sanitation procedures that I am up against. Surely the time has come when all such procedures should be made internationally uniform, and some system of checking a ship from point to point of its voyage be established in place of the present one of treating it as an "unknown quantity" at every port.—I am, etc.,

SHIP SURGEON.

September 9th.

Injuries of the Knee-Joint

SIR,—I have just read Dr. Stewart's letter (July 7th, p. 40). I am as unwilling as he is to perpetuate old heresies, but I am equally unwilling to subscribe to new ones. I hasten to assure him that I have never seen a joint "locked" in extension, but I read his letter to mean that he had. Absence of full extension presupposes some degree of flexion, and I suggest to him that in his cases the injury occurred during an attempt to re-extend the joint after a temporary flexion—that is, a rebracing under strain.

I welcome his suggestion of a slow-motion picture—if he is fortunate enough to obtain one I feel he will change his views. In the meantime perhaps he will describe the mechanism by which injury to a cartilage occurs in a fully extended knee-joint without severe damage to other joint structures.

I regret it was not clear that the last paragraph of my letter (June 23rd, p. 1142) referred to another part of Mr. McMurray's paper—that on crucial ligament injuries.—I am, etc.,

G. STEWART WOODMAN.

Newcastle-on-Tyne, Sept. 11th.

The Swab in Diphtheria Diagnosis

SIR,—I have read with considerable interest correspondence on this subject. As a medical officer of health and superintendent of a fever hospital I have seen a considerable number of cases of this disease during the past fifteen years, and I would like to make the following observations:

1. The diagnosis of diphtheria is by no means as simple as some of your correspondents would maintain; in the early stages of the disease I would defy any expert to diagnose many of the cases.

2. If a practitioner is in any doubt that a case is clinically diphtheria he should not only take a swab, planting the swab exactly upon the suspected area on the tonsil or elsewhere, but should also remember that in quite a number of cases a nasal swab will give a positive result where a throat swab will not. But if there is clinical evidence which renders the practitioner doubtful as to the case being diphtheria it should at once be given at least 8,000 units of concentrated antitoxin, and if the history is longer than twenty-four hours such a dose should be doubled or trebled. Many a child's life would be saved if only this procedure were adopted.

3. It is my sad experience that in all cases of faucial diphtheria, if no antitoxin has been given prior to the fourth day of the disease, if they are true clinical

diphtheria, most will prove fatal: in fact, I always regard it in the nature of a miracle if such a case can be saved, no matter how much antitoxin is given or how it is given, whether intravenously or intramuscularly. The diphtheria toxin has got such an anchorage into the cardiac system that nothing will remove it; the throat may have cleared completely, but still the child will die.

4. There is no doubt whatever that certain cases of faucial diphtheria may give negative swabs—at any rate, *throat* swabs—although possibly the nasal swab, if taken, might have proved positive. Such patients, unless treated as diphtheria, will certainly die, and clinical evidence of the disease in these instances should certainly justify specific treatment. One such case I can recollect did not give a positive swab until the child had been ill for a fortnight and was on the point of death.—I am, etc.,

F. A. BELAM, M.D.,
Guildford, Sept. 15th. Medical Officer of Health.

Obituary

THE LATE DR. C. W. HUTT

Dr. J. S. MANSON, Warrington, writes:

As an old personal friend of Hutt I would like to add a few words to the admirable obituary notice in your issue of September 8th (p. 493). Our friendship commenced during his stay in Warrington, and was maintained with the warmest affection for nearly twenty-five years. His Warrington friends rejoiced at the richly deserved success which he attained in the public health world, and it has been a great solace to me that we stayed together during the meeting of the Scientific Sections at Bournemouth in July. Although in poor health he came down from London to give his valuable contribution to the Public Health Section on immunization against diphtheria, and he was pleased that the Representative Body had authorized the setting up of a special committee on immunization.

He was secretary of the Public Health Section at the Edinburgh meeting in 1927, and although a loyal member of the Royal Institute of Public Health he had a great respect for the Public Health Section of the British Medical Association, and thought that there might be closer co-operation between the two bodies. He often used to speak of his Continental visits, and his broadmindedness and facility of contact with foreigners made one regard him as a good European. He has been cut off when it seemed that further success and honour awaited him; and while all those who knew him deeply regret his loss, their sympathy goes out to his widow and family.

Dr. THACKER KING of Sandfield House, West Kirby, died on July 25th, aged 75. He studied medicine at Dublin, taking the L.R.C.P.I. and L.M. in 1883, and later the Durham M.D. Dr. King worked in West Kirby as a general practitioner for over forty-five years. He had three sons, two of whom he lost in the war, and one, Dr. George King, shortly after he had taken him as a partner. The loss of his sons was a great sorrow to him and Mrs. King, and one from which they never wholly recovered. Dr. Thacker King's success in practice was phenomenal, for he was endowed with the "physician's instinct," and this, coupled with a vast experience and knowledge derived from attending the sick and from extensive reading, rendered him invaluable to his numerous patients. He was a man of fine presence and strong personality, always ready and willing to visit and help anyone at any time, day or night. In addition, his courteous manners, sympathy, and honesty endeared him to friends and patients alike. His loss will be felt acutely by generations of people whom he treated and befriended, and the example he set of clean living, fairmindedness, and friendliness will live for many years. He had been a member of the Birkenhead Division of the British Medical Association for fifty years.

The Services

DEATHS IN THE SERVICES

Lieut.-Colonel Edward Pettingall Youngerman, Madras Medical Service (ret.), died on July 11th, aged 76. He was born on February 4th, 1858, and was educated at Edinburgh, where he graduated M.B., C.M. in 1879. Entering the I.M.S. as surgeon on October 1st, 1881, he became lieutenant-colonel after twenty years' service, and retired on March 2nd, 1907. He served in the Burma campaigns in 1885–6, receiving the frontier medal with a clasp. His whole service was passed in military employ in Madras regiments.

Colonel Claude Kyd Morgan, C.B., C.M.G., late R.A.M.C., died at London, Ontario, on August 10th, aged 62. He was the son of the late David Morgan, J.P., of Douglasleigh, Carnoustie, was born at Inverkeillar, Montrose, on December 2nd, 1871, and was educated at Aberdeen, where he graduated M.B., C.M. in 1893. Entering the R.A.M.C. as surgeon lieutenant on July 28th, 1894, he was promoted to lieutenant-colonel in the long war promotion list of March 1st, 1915, became colonel on December 26th, 1917, and retired on September 22nd, 1920. He was on special plague duty in Bombay in 1899–1921, when he received the thanks of the Government for his work. He served in the war of 1914–18 as A.D.M.S., and was mentioned in dispatches in the *London Gazette* of February 17th and June 22nd, 1915; January 1st, 1916, and May 29th, 1917. He received the C.M.G. in 1916, the C.B. on June 3rd, 1919, and the Legion of Honour. In 1918 he was a member of a British mission to Washington. Two years ago he was appointed honorary lieutenant-colonel of the Canadian Fusiliers and City of London Regiment. In 1905 he married Eleanor (O.B.E., 1919), daughter of the late T. H. Smallman of London, Ontario. By a curious mistake—a confusion with another officer of the same name and initials—his name was entered as dead in the casualty list in the War Office *Army List* for May, 1930.

Universities and Colleges

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-ON-TYNE

Centenary Celebrations

The one hundredth anniversary of the foundation of the University of Durham College of Medicine, Newcastle-on-Tyne, will be celebrated on Thursday and Friday, October 4th and 5th. During the afternoon of the first day the College will be open for inspection, and at 8.30 p.m. there will be an official reception of visitors by the President, Sir Thomas Oliver, in the Great Hall, followed by a conversazione and dance. On Friday morning visits will be paid to view the clinical facilities of the College, the Department of Dentistry, and the Bacteriological Department and Public Health Laboratory.

In the afternoon there will be a luncheon party in the Great Hall of Durham Castle, and a special convocation in the Chapter House of Durham Cathedral, presided over by the Marquess of Londonderry, Chancellor of the University. Honorary degrees will be conferred as follows: Doctor of Civil Law, Sir E. Hilton Young, Minister of Health, and Sir Holburt Waring, President of the Royal College of Surgeons of England; Doctor of Hygiene, Sir Francis Dyke Acland, Chairman of the Dental Board of the United Kingdom, and Dame Janet Campbell, M.D.; Doctor of Surgery, Major-General J. A. Hartigan, D.G. Army Medical Services, Dr. J. W. Leech, M.P., and Dr. William Robinson; Master of Arts, Dr. W. D. Arnison. The closing event will be a commemoration service at 3 p.m. in Durham Cathedral, at which the Bishop of Durham, Visitor of the University, will give an address. A *Centenary History of the Medical School*, published by Andrew Reid and Co. Ltd. at 10s., has been prepared for the occasion by Professor G. Grey Turner and Dr. Arnison.

UNIVERSITY OF LONDON

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

The following entrance scholarships have been awarded at King's College Hospital Medical School: *Raymond Gooch Scholarship*, D. I. Williams (King's College, London), S. C. Truelove (Trinity Hall, Cambridge); *Burney Yeo Scholarships*, C. I. Murphie (Wadham College, Oxford), R. B. Niven (Queen's College, Oxford), D. Whitteridge (Magdalen College, Oxford); *Epsom College Scholarship*, E. Ll. James (Jesus College, Oxford); *Seaman Scholarship*, J. Smallpeice (King's College, London).

Medico-Legal

BUSINESS RELATIONS BETWEEN DOCTORS*

DISSOLUTION OF PARTNERSHIP.—II

QUARRELS BETWEEN PARTNERS

The court will dissolve a partnership in which so intense an ill-feeling has arisen between the partners as to destroy all their confidence in one another, or where there has been an irreparable breach, so that they can no longer carry on business together. A Master of the Rolls (Wray *v.* Hutchinson, 1834) once said that although the partnership would be dissolved if the defendant had substantially failed to perform his part of the agreement, yet it was not the duty of the court to consider mere partnership squabbles. Far too many cases are brought before the courts in which the disputing partners launch the most damaging charges against one another and seriously injure their own good names and that of their profession, besides ruining themselves financially. The court suppresses as much of this mutual abuse as it can, but has to hear such accusations as seem relevant to the applicant's case. The medical defence societies, the heads of the British Medical Association, the editors of medical journals, and all other men of authority in the profession are constantly advising medical partners to keep their quarrels out of the law courts, and I make no apology for emphatically repeating this advice.

Nothing does more harm to the profession or to a pair of practitioners than to have the evening papers full of their mutual and detailed accusations of fraud, sloth, chicanery, petty malice, drunkenness, and immorality. The files of this *Journal* and of the *Lancet* contain a number of instances of this disastrous form of litigation. The charges are nearly all much exaggerated by dislike and irritation, and even if they are true, why on earth have them published? It is the easiest thing in the world for two partners, however bitter their private quarrel may be, to take it to the secretary of one of the defence societies or of the British Medical Association, or to a solicitor with a large medico-legal practice, and have a legal agreement made to dissolve the partnership. If they cannot agree about the disposal of the goodwill and the partnership assets, any of these advisers can easily find them an able and experienced arbitrator of high standing whom they can both trust. They gain nothing by going to law, because when the dispute clearly arises from personal antagonism the judge will nearly always press the partners to settle their dispute out of court instead of wasting public time, and they will then find themselves constrained to appoint an arbitrator after all, having spent a large sum on legal advice and representation and gained nothing in return.

It is possible to multiply examples of this kind of litigation, but I will select one[1] as typical of the general run of partnership squabbles.

Two medical men entered into partnership in London, one agreeing to pay £2,500 for a share in the other's practice. He paid up £2,000, but would not pay any more, and the other sued him for the balance. The purchaser counter-claimed for damages on the ground of fraud and misrepresentation, mainly as to the value of the practice; he also claimed the return of his £2,000 and the rescission of the partnership agreement. The seller thereupon accused the purchaser of chronic recurrent alcoholism, which made him incapable of constantly and regularly performing his part of the partnership agreement. After both doctors had wasted a great deal of time and money fighting the case, they yielded to the pressure of the judge and made a whole-hearted retraction of their statements.

The partnership relation (remarks our contemporary) was evidently intolerable to both. Why could they not save themselves friction, cost, and publicity by a simple mutual agreement to dissolve? The purchase money was the stumbling-block, but if they could have referred the point to some umpire in whom both had confidence, he could have settled the dispute and they would not have needed to waste money in litigation.

If a partner finds himself in the unpleasant position of suspecting his fellow of serious misconduct, and decides that he must have recourse to a third party, he must take care that he does not expose himself to an action for libel or slander by his fellow. Even if he makes a statement to another person which he honestly considers necessary to protect his own and the partnership interests, he must be prepared to prove to the satisfaction of a jury: (1) that the third party to whom he resorted was one to whom he might rightly and reasonably have turned in the circumstances; and (2) that he acted in absolute good faith, with no ulterior motive. For instance, he may safely consult a solicitor, or ask in confidence the advice of another medical man of good standing whose wisdom and experience may help him and who has no personal prejudice, or approach a person with authority to take action. If, for instance, he considers it necessary to take the extreme step of having his partner certified as of unsound mind, he may furnish the necessary information to the medical man whom he is asking to give the certificate.

RIGHTS OF PARTNERS IN DISSOLUTION

When the court orders dissolution, the partnership will usually be dissolved from the date of the judgement. If, however, there has been any actual misconduct, or a breach of duty under the articles, or bad faith, the court may order the dissolution as from an earlier date, so that the guilty partner may not draw profits for the time during which the business was being damaged by his misconduct.

When a partnership is dissolved or a partner retires, any other partner may publicly notify the fact and require the other partners to concur in all necessary steps which he could not take without their consent, such as signing their names to an advertisement in the *London Gazette*—one of the means laid down by the Partnership Act of giving notice to all whom it may concern. The legal position of the partners, both with regard to each other and to outsiders, remains the same until the affairs of the partnership have been wound up and transactions which were commenced before the dissolution have been completed. Each partner, except a bankrupt, still has authority to bind the firm, and his rights and obligations are not altered. Each partner is entitled to have the property of the firm applied to pay off its debts and then to claim his share of the remainder, less anything he may owe the firm. For this purpose any partner or his representatives may after dissolution apply to the court to wind up the firm's business. A medical partner, however, cannot have the goodwill and connexion of the partnership sold, because its value is largely potential and depends on the future exertions of the several ex-partners.

In Farr *v.* Pearce (1818) A paid B a large premium for a share of his practice. A died and B sold the practice for a considerable sum. The representatives of A were held not to be entitled to any share of the money for which the goodwill was sold. Sir J. Leach, Vice-Chancellor, said in his judgement: "It would be difficult to maintain that where a partnership is formed between professional persons, as surgeons, and one dies, the other is obliged to give up his business and sell the connexion for the joint benefit of himself and the estate of his deceased partner. When such partnerships determine, unless there be stipulations to the contrary, each must be at liberty to continue his own exertions, and where the determination is by the death of one, the right of the survivor cannot be affected. Such partnerships are very different from commercial partnerships.

* The first of these articles, by a legal correspondent, appeared on June 9th, 1934 (p. 1053), the second on June 23rd (p. 1145), the third on July 7th (p. 42), and the fourth on July 21st (p. 141).

[1] *Lancet*, 1926, ii, 37.

The goodwill therefore belongs to no one and is available to anyone who is willing and able to make use of it. When, however, goodwill has already been sold by some one in a position of trust, or under an arrangement made to defraud creditors, the court will order the proceeds to be paid to any person who has in conscience a right to them. For instance, a medical partner runs heavily into debt, and knows that in a month or two his largest creditor will make him bankrupt. He therefore assigns his interest in the practice in exchange for an annuity payable to his wife till her death and afterwards to him. The court would declare this transaction void as a fraud against the creditors.

RETURN OF PREMIUM

When one partner, on entering into partnership for a fixed term, has paid another partner a premium, and the partnership is dissolved—otherwise than by the death of a partner—before the expiration of the term, the court may order the recipient to repay as much of the premium as it thinks just, considering the terms of the contract and the length of time during which the partnership has continued. The court will, however, not order repayment if the partnership is dissolved largely because of the misconduct of the partner who paid the premium, or if it is dissolved by an agreement which contains no stipulation that any part of the premium should be repaid. The fraction to be repaid has always been determined by purely arithmetical means: dividing the whole amount of the premium by the number of years in the term and awarding the sum corresponding to the number of years that have elapsed. Death is excepted because it is a contingency that must be contemplated by everyone, and possibly lunacy may also be excepted. If an affluent partner pays a premium to a doctor whom he knows to be in financial difficulties, he may not be able to recover any of it if his partner goes bankrupt, but if he did not know that the recipient was embarrassed he may have the problematical satisfaction of proving his claim in bankruptcy. When a partner is seeking to recover some of his premium, counsel should ask for an order for its return at the trial of the application for dissolution. If this is not done, the partner will probably lose his money, for the court will only in special circumstances make an order after it has given judgement for dissolution.

The following cases illustrate the principles on which the courts order premium to be returned.

In Freeland *v.* Stansfeld (1854) two medical men, F and L, agreed to become partners for seven years. F paid L a premium of £900, and was to take one-third of the profits. In a year and a half L became bankrupt, and F sued S, the trustee in bankruptcy, asking for dissolution and the repayment out of the partnership assets of a proportion of the premium. S contended that F had had full value for his £900 in being introduced to L's patients and given the opportunity of forming a valuable connexion; he said also that if F had a claim he ought to make it as an ordinary creditor in bankruptcy. Stuart, Vice-Chancellor, declared in his judgement, however, that the premium was paid not for the introduction alone, but also in order that L should carry out his part of the agreement, which included the division of the profits. The partnership was ended prematurely by L's default, and as F could no longer obtain a considerable proportion of what he had paid for, it was not unnatural that he should claim that a corresponding proportion of his premium should be given back to him. It is a settled principle in equity that if, under a contract, a sum of money is paid for a consideration which afterwards fails, the recipient of the money must pay back that part of it which corresponds to the part of the consideration which has failed. The Vice-Chancellor awarded F £700 out of the partnership assets.

In Astle *v.* Wright (1856) the partnership was dissolved after a few months on account of personal friction. W, the newcomer, complained that A, the recipient of the premium, had failed to introduce him to the patients and had misrepresented the value of the practice. A, in his turn, charged W with neglecting to attend to the surgery, make up the medicines, or keep the books. Half the premium had been handed over; A claimed the remainder with interest and W claimed the return of what he had paid. The Master of the Rolls found that there had been no misrepresentation, as W had spent a considerable time in A's house and had ample opportunity of judging the value of the business. He ordered A to return that part of the premium which corresponded to the unexpired term.

In Atwood *v.* Maude (1868) M, the recipient, alleged that A was so incompetent that the business could no longer be carried on, but the Court of Appeal considered that M had had ample opportunity to judge of A's capacity before he entered into the contract. As there had been no fraudulent or wilful misconduct, they ordered M to return an appropriate part of the premium.

In Wilson *v.* Johnstone (1873) Wickens, Vice-Chancellor, suggested that the court would only refuse to order the return of premium in a case where the payer had committed such deliberate and serious breach of the partnership contract as might be considered equivalent to a repudiation of it altogether. Mere conduct entitling the recipient to a decree for dissolution would not, he thought, be sufficient. The Act, on the other hand, lays down that there need be no return of premium when the dissolution is chiefly due to the misconduct of the payer, and return may perhaps be refused nowadays on grounds which would not have been sufficient before the Act.

It has been held more than once that, when the partnership articles contain a general clause providing a reference to arbitration of any difference between the partners as to anything relating to the partnership, the arbitrator can award dissolution and a return of premium (Belfield *v.* Bourne, 1894). It is, of course, always open to partners to agree to refer a dispute or conditions of dissolution to a named arbitrator and to abide by his finding.

FRAUD: CONTINUATION OF BUSINESS

If a partner is induced, by the fraud of another partner, to enter into a partnership and pay a premium, he has a choice of two remedies. He may either repudiate the contract altogether and sue for rescission, or he may affirm the contract and sue the offending partner for damages. If the other partner has misrepresented the value of the share or the nature of the practice, but not in such a way as actually to commit fraud, the aggrieved partner may successfully claim rescission and repayment.

When a partner proves that another has been guilty of fraud or misrepresentation and succeeds in obtaining an order of the court for the rescission of the partnership on those grounds, he is given several important rights in addition to his ordinary rights as a member of a dissolved partnership. He has a lien on, or a right to retain, the surplus of the partnership assets which is left over after the liabilities are settled, to satisfy him for any sum he has paid for a share in the partnership and for any capital he has contributed to it. If he has paid off any partnership debts, he may stand in the place of the creditors whom he has paid, and the partner who has committed the fraud or misrepresentation must indemnify him against all the debts and liabilities of the firm. He is treated, in fact, as though the partnership had never existed, and the law endeavours to place him, as far as it can, in the position which he occupied before he entered into the partnership agreement.

If a partner dies or otherwise ceases to be a partner, the partnership is, of course, dissolved. Nevertheless, it sometimes happens that the remaining partners carry on the business of the firm with its capital or assets. If they do this without settling a final account with the outgoing partner or his representative, then he or his representative is entitled either to that proportion of the profits made since the dissolution which the court may attribute to the use of his share of the partnership assets, or to interest at 5 per cent. on the amount of his share. When the partnership agreement contains a clause giving the continuing partners the option of buying the share of a partner who dies or goes out, and they exercise that option, then the outgoing partner or his representatives cannot claim any further profits. They must, however, comply in all material respects with the terms of the option, or they may have to account to him for his share of the profits since dissolution. The goodwill or connexion of the partnership is not an asset in this sense, but an appointment is.

Medical News

The annual dinner of past and present students of Charing Cross Hospital Medical School will take place on September 29th at the Café Royal, Regent Street, at 7.30 for 8 p.m., with Dr. J. Bright Banister in the chair; cost of tickets 10s. each. The autumn post-graduate course will be held on Saturday and Sunday, September 29th and 30th, from 10 a.m. to 5 p.m.

The new session of the London (Royal Free Hospital) School of Medicine for Women will open on Monday, October 1st, at 3 p.m., when an address on "The Institutes of Medicine" will be given by Dr. M. H. MacKeith, dean of the British Post-Graduate Medical School.

A post-graduate course, open to all medical practitioners without fee, will be held in the library of the new medical school, and in the lecture theatre of the Pathological Institute, at St. Mary's Hospital, on Friday, Saturday, and Sunday, September 28th, 29th, and 30th, commencing at 10.15 a.m. daily.

As already announced the annual old students' dinner of Westminster Hospital will be held on Saturday, September 29th, at the Trocadero Restaurant, at 7.15 for 7.45 p.m. The chairman on this occasion will be Mr. William Turner, senior surgeon, who retires from the active staff on October 1st, after thirty-seven years' association with the hospital.

A "refresher" course will be held at Middlesex Hospital Medical School from September 28th to October 1st inclusive at 10.15 a.m. daily. The course is open only to past students of the Middlesex Hospital. The opening ceremony of the new session will be held on Monday, October 1st, at 3 p.m., at the Queen's Hall, and the annual dinner at the Savoy Hotel at 7.30.

Two courses of lecture-demonstrations will be held at the Medical School, National Hospital, Queen Square, W.C., from October to December, 1934, and from January to March, 1935. These will include demonstrations on anatomy, physiology, and pathology, and demonstrations on post-mortem material, at 12 noon; lectures on the principles of neurology and on nervous diseases, at 3.30 p.m.; demonstrations of clinical methods of examination in nervous diseases, at 5 p.m. The autumn course of lectures from October 8th to December 7th, 1934, includes thirty-six lectures on the principles of neurology, and the winter course of lectures and demonstrations from January 28th to March 29th, 1935, includes thirty-six lectures on nervous diseases. The fee for each course is £10 10s., and special arrangements will be made for those unable to take the whole course.

The Fellowship of Medicine (1, Wimpole Street, W.1) announces that lecture-demonstrations will be given at 11, Chandos Street, W., on Tuesdays at 2.30 p.m., as follows: September 25th, paraplegia; October 2nd, tremor. Forthcoming arrangements include a week-end course in diseases of the heart and lungs at the Royal Chest Hospital, occupying the whole of October 13th and 14th; diseases of children at the Queen's Hospital, October 1st to 13th, all day; dermatology at St. John's Hospital, October 1st to 27th, afternoons and evening; physical medicine at St. John Clinic and Institute of Physical Medicine, October 1st to 27th, evenings; medicine and surgery at the Metropolitan Hospital, October 8th to 20th, all day; ophthalmology at the Royal Westminster Ophthalmic Hospital, October 15th to November 3rd, afternoons. Courses of instruction are open only to members and associates of the Fellowship.

The twenty-second annual conference of the Scottish Association of Insurance Committees will be held at Stranraer on September 28th and 29th in the Town Hall. The programme includes an address by Professor Charles McNeil, M.D., of Edinburgh.

The Royal Sanitary Institute has arranged a sessional meeting at Finchley on Friday, October 5th. At 3 p.m. the members will inspect the Finchley open-air swimming pools in the Great North Road. The mayor will receive the members at 4 p.m. and entertain them to tea, and at 5 p.m., in the dance hall, papers will be read on "The Finchley Swimming Pools" by Mr. P. T. Harrison, and on "The Purification of Swimming Bath Water" by Dr. A. A. Turner.

The Minister of Health has had under consideration, in consultation with the Commissioners of Customs and Excise, what further steps can be adopted for avoiding conflicting decisions on the question of blindness for the purposes of (*a*) blind old age pensions under Section 1 of the Blind Persons Act, 1920, and (*b*) the registration of blind persons under schemes made by local authorities in pursuance of Section 2 of that Act. It has been decided that from October 1st next the pension officer, before reporting on a claim for a blind pension in England and Wales, shall send a form of inquiry (Form O.A.P. 87) to the appropriate registration authority asking the following questions: (1) Has the claimant applied for registration as a blind person? (2) Has the claimant been registered or refused registration? (3) In either case, was the claimant examined and certified by a medical practitioner with special experience in ophthalmology? (4) If the answer to (3) is in the negative, on what evidence was the claimant registered or refused registration? Where the Minister gives a decision on a pension appeal which is contrary to that previously given by the registration authority on the question of registration, he will on the request of the authority send it a copy of the medical certificate obtained by him.

The issue of *Paris Médical* for September 1st is devoted to ophthalmology and oto-rhino-laryngology.

Queen Marie of Yugoslavia will open the new Anglo-Yugoslav Children's Hospital at Kamenica this month. The hospital will specialize in the treatment of tuberculosis. According to Dr. Katherine Macphail, who founded the Anglo-Yugoslav Children's Hospital at Belgrade, where 170,000 patients have been treated, tuberculosis accounts for the death of 50,000 persons annually, and at any given time there are estimated to be more than half a million people suffering from the disease out of a population of rather more than thirteen millions. The Belgrade Hospital, which was for some years the only children's hospital in the country, has received support from the Save the Children Fund from its earliest years.

The King's Fund miniature hospital, built for King Edward's Hospital Fund for London at a cost to the contributing firms of nearly £3,500, has recently completed a year's successful tour of the provinces. The model is now to be exhibited at various leading stores in the London suburbs during the next few months.

Sir Grafton Elliott Smith of London and Professor Charles Nicolle of Tunis have been elected honorary foreign members of the Royal Academy of Medicine of Belgium.

Medical stamp collectors will be interested to know that the Hungarian Government has recently introduced stamps bearing the likeness of Philip Ignaz Semmelweis after the model of the French stamps with the head of Pasteur.

The Berne University Foundation for the Advancement of Researches on Encephalitis has offered a prize of 1,000 Swiss francs for the best work on the diagnosis and treatment of encephalitis. Competitors should communicate with the dean of the Faculty of Medicine of Berne.

The following appointments to professorial chairs have recently been made in the American faculties of medicine. Boston: Dr. W. Overholsen, psychiatry; Dr. L. C. Howard, orthopaedic surgery and traumatology; Dr. D. Jacoby, dermatology; and Dr. L. W. Colburn, otology. Columbia University, New York: Dr. D. Symmers, general pathology; Dr. M. D. Rosenbluth, clinical medicine; Dr. C. Gordon Heyd, clinical surgery. Chicago: Dr. Amburger, clinical medicine. Harvard: Dr. S. H. Waite, ophthalmology.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBER** of the British Medical Association and the *British Medical Journal* is EUSTON 2111 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

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QUERIES AND ANSWERS

Burning Sensation in Diabetes

"J. S. M." writes: I have a case of diabetes on insulin. This patient complains of an intense feeling of burning and heat over the lumbar regions. There is no sign of local irritation; and general treatment has failed to relieve. I would be grateful for suggestions as to cause and prevention. Can it be a specific effect of the insulin?

John Knight: Serjeant Surgeon

"E. M. C." asks for information about Dr. John Knight, Serjeant Surgeon in the time of Charles II.

*** Sir D'Arcy Power wrote an article on "The Serjeant Surgeons of England and their Office." It appeared in *Janus* (1900, p. 174), and was reprinted in the *St. Bartholomew's Hospital Journal*, 1900–1, vol. viii, p. 81). Speaking of John Knight, who was appointed Serjeant Surgeon in 1661, he says: "He was one of those who attended Charles II on his voyage from the Hague to Dover at the time of his restoration. He was constantly occupied with matters concerning the sick and wounded seamen during the Dutch War." He was therefore mainly a naval surgeon; but as the two services were not then separate he also acted from time to time as surgeon general to the Army. Mr. Pepys dined with him, and reports him as being merry and very good company. Professor G. E. Gask has also written an account of the earliest surgeons attached to the Court in the *Proceedings of the Royal Society of Medicine* (vol. xix). Two further references to Serjeant Surgeons will be found in the *British Medical Journal* (1900, i, 583, and 1925, i, 224).

Head and Foot Presentation

Dr. PAUL GOLDSCHMIDT-FÜRSTNER (Cologne) writes in reply to Dr. Alastair C. Thomson's inquiry regarding the frequency or otherwise of simultaneous head and foot presentations (*Journal*, August 25th, p. 380): I found the following relevant passage in Jaschke-Pankow's *Lehrbuch der Geburtshilfe*, 1923—"Protrusion of a foot beyond or beside the head occurs practically *only* with an immature or macerated foetus, or it may occur in the case of twins, where both commence descent at the same time. In singleton births one replaces the foot, or if it has descended too far one changes the position into a true foot presentation through traction on the foot and replacing the head from without." Protrusion of both feet alongside the head is not noted. I myself have seen at least two cases in which one foot presented alongside the head, and in which reposition of the head with traction on the foot proved successful.

Income Tax

Employment Abroad

"J. A. F." entered into an agreement with a person residing in Canada to act as his medical attendant, and served him in that capacity abroad from September, 1931, to January, 1934. He had no residence in the United Kingdom, but paid short vacation visits here. Is the income liable to assessment?

*** In our opinion, seeing that the services were rendered wholly abroad to a foreign principal, "J. A. F." is not liable. The contrary would, however, have been the case if he had maintained a residence here.

Division of Partnership Assessment

"E. C."—As for 1933, "A's" share was reduced from two-thirds and "B's" increased from one-third to one-half each. At the same time the profits of the practice fell from £4*x* to £3*x*. Consequently "B" is now assessed at one-half of £4*x*, whereas he did not receive more than one-half of £3*x*. Has he any remedy?

*** No. There has been no change in the personnel of the firm, and consequently a fresh start cannot be claimed for the operation of the basis of assessment of the previous year. It is a result of the principle of dealing for income tax purposes with a firm as a distinct entity, and a fluctuation (up or down) of profits necessarily disturbs the equity as between the two partners.

Payment of Subscriptions

"J. C." refers to an issue of this *Journal* in which it was stated that subscriptions to the British Medical Association, medical defence societies, etc., were deductible, and explains that in his income tax return, made as an assistant M.O.H., he claimed to make such deductions, and his claim was refused.

*** The reply to which our correspondent refers related to an assessment under Schedule D in respect of profits, whereas his personal liability falls under Schedule E as being in respect of the emoluments of an employment. There is an unfortunate difference, the statute being stricter in the case of Schedule E. The point was decided against the taxpayer in 1925 in the case of Simpson *v.* Tate.

LETTERS, NOTES, ETC.

Asthma in Children

Dr. ALEXANDER FRANCIS (London, W.) writes: The letters by Sir James Dundas-Grant in the *Journal* of August 4th and by Dr. James Adam in the issue of August 18th on asthma in children are valuable in drawing attention to the importance of nasal examination, and to the necessity of putting some check upon the present craze of considering allergy as the root of all ills. It is really amusing to note how apt we are to run any new idea to death. Allergy, sinusitis, septic tonsils, adenoids, intestinal sepsis, etc., are active sources of irritation, but they are only the *exciting* causes of asthma. Certainly it is important to remove such irritations, but we must not allow them to mask the fact that the fundamental cause of asthma is vasomotor instability. I could quote case after case in which vaccines and immunizing injections against allergic irritants have proved useless, and in which such irritants have lost their harmful effects when the vasomotor system has been made stable. In one case a boy of 12½ had had twenty-five months of weekly injections, in addition to having had his tonsils, adenoids, and appendix removed, and to undergoing two years of glucose treatment, without deriving any apparent benefit. As soon as his vasomotor system had been made stable and he was fitted with proper glasses his asthma left him. Another boy of 14, who had suffered from asthma from the age of 3, had had five years of injections in the vain hope of immunizing him against the supposed allergic causes of his trouble. He obtained almost immediate relief after I saw him in 1932, and has remained free from asthma, except for occasional attacks as the result of some undue excitement. Owing to the fact that the nervous system in children is more impressionable than in adults, it takes a rather longer time as a rule to make their vasomotor systems stable, but as a class they give a higher percentage of good results.

Prognosis in Hypertension

Dr. H. O. GUNEWARDENE (Colombo, Ceylon) writes: It is very interesting to read Dr. Platt's observations upon hypertension and albuminuria in the *Journal* of July 21st (p. 138). For many years I have found that a persistent diastolic pressure of 130 or over, and a urine showing what I have chosen to describe as a "cigarette-puff density" of albuminuria to the heat test, is reliable ground on which to base a very bad prognosis, even in the absence of serious changes in the retina. I have used this expression as regards the albuminuria in order to indicate in a simple way that the quantity of albumin need not be much. It may be anything above this quantity. Here is an illustrative case:

M. R. C., aged 39, married, seen by a doctor, sought advice as he was rejected by an insurance company, being a case with high blood pressure. Condition on examination: Apex beat, quarter of an inch external to nipple line; pulse 72; blood pressure 200/140; lungs normal; spleen ++ (malarial); liver normal; urine, specific gravity 1005, albumin +, no sugar. Micturition was twice nightly and four to five times a day. There were no arterial changes in the fundi. Treatment was by (1) lacto-vegetarian diet, with weekly fasts; (2) elixir sodium sulphocyanate (P. D. and Co.), as directed; and (3) potassium iodide, potassium bromide, and magnesium sulphates. This patient died within nine months from cerebral haemorrhage.

These two observations seem to be quite enough in most cases, whatever the pathology of the kidney. When a patient comes with a single specimen to the general practitioner's consulting room, or even to a specialist, one is often obliged to give a prognosis if possible without the help of so many renal function tests—at least when the patients cannot afford to pay the biochemist or are unwilling to attend hospital.

Treatment of Dysmenorrhoea in Virgins

Dr. NUTTING FRASER (St. John's, Newfoundland) writes: In the *Journal* of August 11th (p. 257) you review Dr. James Young's *Text-Book of Gynaecology* in a very favourable way, expressing views which those of us who have read the book will heartily endorse. You do not agree with him that "an infected cervix is a common cause of pain in women," and I would like to state that my experience quite coincides with the opinion expressed in Dr. Young's book. I find that many of the cases of severe dysmenorrhoea in young girls are caused by an infected cervix, and medicine is powerless to relieve the distress. Of course, we all hesitate to examine a virgin, and such examination calls for a general anaesthetic. But if the small rectal speculum, commonly used for injecting haemorrhoids, is used, an examination can be satisfactorily made without any injury to the hymen. The cervix can be exposed, drawn down, and cauterized. Five years ago a lady asked me to treat her maid for dysmenorrhoea, the pain being so severe that she lost a couple of days each month. Medicine proved ineffectual, but the patient was desperate, and would submit to anything that might give relief. An examination was thus decided upon and was made under an anaesthetic. The cervix was badly eroded and exuded pus. Both lips were deeply cauterized, and up to the present time the result has been a complete relief of the pain. Menstruation is regular and painless. Following this case I have treated many others in the same way, and always successfully, and I would like to draw attention to the fact that the rectal speculum can be used like the old Ferguson speculum, and need not damage the hymen.

Adrenaline and Cerebral Haemorrhage

Dr. A. J. DUNLEVY (Ogmore Vale, Glamorgan) writes: The history of this case may prove of sufficient interest for publication. I must state that the treatment was accidental, but I think the case worth recording as an observation. Whilst acting as locumtenent I was called to see a woman who was supposed to have swallowed some liniment in mistake for brandy. She certainly may have tasted the liniment, but she had not swallowed any. I gave the usual milk and albumin treatment, and satisfied myself that she was all right before I left her. I was called to the same patient that afternoon and found her unconscious, with stertorous breathing. I had been told by her own doctor that this patient had a bad heart. Without waiting to do any examination I gave 1/100 grain adrenaline and 1/30 strychnine. After I had given the injections I discovered that there was a hemiplegia of the left side, and that the case was really one of cerebral haemorrhage. I felt that I had made a grave error in treatment. I saw the patient later that night and found her a little better. Next morning she was conscious, and felt quite well; in fact, it was with difficulty that she was persuaded to stay in bed, as she felt so fit. I think the original "poison" fright probably caused the cerebral haemorrhage. We know that adrenaline constricts the vaso-constrictor nerves, but I think that it is generally understood that the cerebral vessels are not supplied with vaso-constrictor nerves. Hitherto, I thought that adrenaline would have been contraindicated owing to the danger of the raised blood pressure driving more blood into the ruptured lenticular striate branch of the middle cerebral artery. In this case I used adrenaline accidentally, and I wonder if the raised blood pressure retarded the haemorrhage by slowing the rate of extravasation (Marie's law); the constriction of the aorta and large blood vessels serving also to reduce the haemorrhage. The case may interest your readers, as, personally, I am convinced that adrenaline is well worth trying in these cases, which are so often left to nature to cure.

Labour and Heart Disease

Dr. CHARLES J. HILL AITKEN (Kilnhurst, near Rotherham) writes: In connexion with two *Epitome* paragraphs dealing with the above subject (No. 131, August 18th, and No. 150, August 25th) I read in the late D. Berry Hart's *Midwifery* the following statement: "I early advocated the view, which has also been brought forward by Dr. Angus MacDonald and others, that the serious results in the third stage were due to an embarrassment of the right side of the heart . . . and that thus the best thing for the patient was not to hinder loss of blood in the third stage, but rather to see that the patient lost blood to a fair amount, and that if there were any doubt of this she should be bled from the arm" (p. 337). This was written in 1912, and Dr. Angus MacDonald died a great many years ago.

Medical Work in Basutoland

Dr. N. M. MACFARLANE, late principal medical officer in Basutoland, has compiled a record of medical work in this Territory. It is of special interest at the present time when there is a general movement to develop health services for native populations, for it shows how one small native State proceeded. The Territory of 11,000 square miles is populated by over half a million natives. Dr. Macfarlane describes the early work of the missionaries, who were solely responsible for scientific medicine until the appointment of the first Government medical officer in 1875. Details are given of the energetic pioneer work of the early officers, Drs. E. B. Hartley, H. S. Taylor, L. C. Daumas, and S. C. Reed. Small hospitals and free dispensaries came into being, and in the last decade of last century the medical work was growing apace. The South African War brought further expansion; the existing small hospital at Maseru was enlarged and modernized, and new ones were opened elsewhere. One achievement of this period was the almost complete eradication of small-pox, which had previously been endemic for many years. More than half a million vaccinations had been performed, and it had been made compulsory for all natives leaving the Territory to carry a vaccination certificate signed by a medical officer. The first leprosy asylum was established by one of the enlightened native chiefs, and this led the way to the opening of the Basutoland asylum in 1913. The usual difficulties followed its being conducted more as a house of detention than as a hospital. Despite the difficulty of financing a rapidly growing medical service, progress continued; sanitary areas were defined, and more medical officers of districts were appointed by the Government. Active work against leprosy continued, and paved the way for the complete survey some four or five years ago. The leprosy organization was inevitably planned on a rather expensive basis, its inception having preceded the more recent discoveries which have led to great economies.

A Schedule to the "National Formulary"

The Paddington Medical Society has issued a revised edition of their *Schedule to the National Formulary*, which shows the approximate and the relative cost of the formulae and of the dispensing fees in the *National Formulary* (1933). Copies can be obtained (price 1s.) on application to the honorary secretary, Paddington Medical Society, 81, Elgin Avenue, London, W.9.

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 35, 36, 37, 38, 39, 40, 41, and 44 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 42 and 43.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 172.

EPITOME OF CURRENT MEDICAL LITERATURE

Medicine

193 Occult Cardiac Insufficiency

In the first number of the *Revista Argentina de Cardiol.* (March–April, 1934, p. 11), F. COSSIO and L. BERCONSKY demonstrate the frequent existence of cardiac inadequacy in cases where its more manifest signs are non-existent. They noted that the absence of dyspnoea (both "effort" and paroxysmal), of physical and intellectual fatigue, of diminution of the differential tension and gallop rhythm, functional, mitral, or tricuspid inadequacy, venous hypertension, congestion of the lung bases, "cardiac liver," oedema of dependent parts, and exudation into serous cavities is held by clinical teachers to be sufficient evidence of perfect heart-muscle competence. Analysing twenty-seven cases of varied cardiopathy which were free from these manifestations, the writers found that in 80 per cent. the work of the cardiac pump, and thus its output, was diminished. All were examined under the strictest basal conditions while at rest in bed. Pulse and respiratory rates, arterial tension, venous pressure, circulatory speed, vital capacity, difference between the oxygen content of arterial and venous blood, respiratory and circulatory "minute volumes," systolic volume, lactic acid percentage in venous blood, and dimensions and electrocardiographic condition of the heart were all taken. They explain the absence of dyspnoea as due to an increased concentration of oxyhaemoglobin and an increased supply of O_2 in the capillary network, both counterbalancing the diminution of blood supplied to the tissues. Visceral congestion is absent owing to the lessening of blood stasis following upon a slight diminution of the cardiac output. In all patients with structural alterations in the cardiovascular system—even though there may be entire absence of dyspnoea or visceral congestion—an increase of the contraction rate when engaged on a definite effort, a reduction of the differential pressure, and positive cardiac enlargement should point to the probable existence of a diminution of the output of the organ. If to these be added increased rapidity of the blood stream and increased differential ratio between the venous and arterial oxygen with reduced vital capacity, one may be convinced that the power of the heart as a pump has deteriorated. To obviate the conversion of occult to apparent cardiac incompetence, digitalis is essential.

194 X-Ray Diagnosis of Pulmonary Tuberculosis

B. KATTENTIDT (*Münch. med. Woch.*, June 15th, 1934, p. 912) much prefers the *x* rays to auscultation and percussion in the diagnosis of pulmonary tuberculosis, and he analyses his experience with the routine *x*-ray examinations (screening) of 30,000 students in Munich since 1929. In support of his dictum that "percussion and auscultation are almost a complete failure, even in open active tuberculosis," he notes that among 10,000 students submitted to auscultation only two were thus found to be suffering from open tuberculosis. On the other hand, in another group of 10,000 students thirty-five were found on screening to be suffering from open tuberculosis. In a group of 1,526 persons sixty-nine were found on auscultation to be suspects; but screening showed thirty-five of these sixty-nine to be perfectly normal, and as for the remaining thirty-four, the scarring of their lungs was comparatively slight. Yet in the same group screening revealed five open and three active but closed cases of tuberculosis, and as many as 193 cases of pulmonary disease about which nothing had been heard on auscultation. Even the most extensive tuberculosis may be compatible with a capacity for great physical exertion, and there may be no symptoms such as cough to betray it. About three-quarters of all the cases of ignored pulmonary tuberculosis are not to be detected by auscultation, and can be discovered only by the *x* rays. In Munich the average interval between the development of the first focus of disease and its diagnosis is three years. The author insists that when the community is educated to the point at which routine screening of the lungs is systematically repeated on everyone, the diagnosis of infectious active pulmonary tuberculosis will have been hastened by years. At the present time in Munich one case of open active tuberculosis is to be found to every 200 persons between the ages of 18 and 25. In every fifty such persons there is one with extensive tuberculous scarring, in every fifteen there is one with slight scarring in need of watching, and in every five there is one with negligible tuberculous scars. The author insists on the great skill and experience required in the correct interpretation of what is seen on screening.

195 Mode of Infection in Weil's Disease

P. H. VON THIEL (*Nederl. Tijdschr. v. Geneesk.*, July 7th, 1934, p. 3115) states that, though there is general agreement that *L. icterohaemorrhagiae* invades the human organism by the skin, especially when it is damaged, as well as by the mucous membrane of the digestive tract, it has not hitherto been known by which route infection occurs most often and most readily. The author accordingly carried out experiments with rats and guinea-pigs, which proved that, although infection by the mouth is possible, several millions of spirochaetes could be swallowed by these animals without their contracting the disease. Infection was found to be conveyed much more readily by the nasal route and also by the conjunctival mucous membrane. In all probability, therefore, water inhaled by the nose is much more dangerous for swimmers than swallowed water.

196 Dangers of Bronchography

Although bronchography is valuable in the diagnosis of certain conditions, especially bronchiectasis and bronchial stenosis, F. LICKINT and HIPPE (*Med. Klinik*, July 13th, 1934, p. 937) state it is only indicated in exceptional cases when all other diagnostic methods have failed. Bronchography is contraindicated in diseases of the heart and blood vessels, in acute inflammations of the upper respiratory tract, in hyperthyroidism, and in patients who are nervous or have an idiosyncrasy to iodine. The authors quote several cases in which the iodine acted as a plug in parts of the lower respiratory tract, causing death. They state that the instillation of iodine in tuberculous patients is fraught with danger, as it may activate latent disease. After bronchography most of the iodine is coughed up, but minute quantities may remain for several months, producing untoward results—granulations in the lungs, iodism, and sharp rise in temperature. The most common danger of bronchography is infection of the respiratory tract, and the authors describe a case of bronchopneumonia which occurred after the procedure. That it did not terminate fatally they regard as unusual. Bronchography should not be undertaken in nervous patients, as in them it has been known to produce grave shock, collapse, and epileptiform fits.

197 Atypical Forms of Serum Disease

N. SCHLIESSER (*Thèse de Paris*, 1934, No. 408), who reports ten illustrative cases in patients aged from 6 to 22 years, states that the complications of serum treatment are very frequent, but are usually mild in character. There are, however, certain rare atypical forms, the prognosis of which may be very grave. These include orchitis and orchi-epididymitis, generalized adenopathy, gastro-intestinal symptoms, paralysis and amyotrophy, acute suprarenal insufficiency and sudden death, and acute articular rheumatism and cardiac complications. Prophylaxis consists in only using the intravenous and intrathecal routes in cases of absolute necessity, employment of refined serum, and the use of the ordinary methods of desensitization. As regards treatment, the best results are secured by adrenaline, ephedrine, pancreatic extract, and magnesium hyposulphite.

Surgery

198 Urethrography in Nurslings

According to I. MIHALOVICI (*Journ. d'Urol.*, June, 1934, p. 516) radiography of the male urethra and its adnexa is as practicable in the nursling as in the adult. For the contrast substance he employs a 50 per cent. solution of thorotrast, and injects 7 to 8 c.cm. under gentle pressure, the infant being placed in a slight right lateral position with the left leg flexed on the flexed, abducted thigh, and the right leg extended. The plate is taken at the time of the injection, not, as in adults, at the moment of micturition. A radiograph is presented which shows a congenital stricture in an infant 2 months old, and one of a normal child, aged 3 weeks. The latter demonstrates that in the newborn the urethral bulb is formed, and that during average filling of the bladder the lower vesical wall is almost in a straight line.

199 Biliary Fistula following Gastrectomy

O. FRANCKE and N. FALCOIANU (*Bull. et Mém. Soc. Nat. de Chir.*, June 30th, 1934, p. 893) point out the post-operative complications which may follow a gastrectomy, and consider that injury to the bile duct is one of the most serious. Attention is drawn to the advisability of making a careful examination before mobilizing the duodenum, as if the bile duct is not involved in the ulcer a gastro-duodenal resection can be undertaken without great risk. But in certain cases, when the bile duct has been partially eroded by the ulcer and a spontaneous choledocho-duodenostomy has been formed, it is better to let the condition persist. It has been found that the biliary fistula is not always discovered at the time of operation, and the bile does not begin to flow until some days after. A case is reported in which it was found at operation that a duodenal ulcer was adherent to the pancreas, gall-bladder, and bile duct, and the freeing of the parts and subsequent anastomosis was carried out with some difficulty. Post-operative conditions were normal for two days, but on the third day there was an abundant flow of bile from the wound where the drain had been. The patient's general condition was deteriorating, and twenty-eight days after the first operation a further laparotomy disclosed a mass of adhesions which fixed the liver and the transverse colon to the anterior abdominal wall. There was also a band of adhesions round the gastro-jejunal anastomosis, in which was seen an opening as big as a 50-centime piece, from which a large quantity of bile was flowing. As it was impossible to make an anastomosis between the fistula and the intestine, it was considered advisable to make one between the gall-bladder and the jejunum. The opening of the fistula could not be closed owing to the friability of the tissues, and it was plugged with compresses. After a stormy convalescence and the appearance for a few days of a smaller fistula the patient made a good recovery. It is suggested that the fistula was produced by necrosis of the wall of the bile duct.

200 Osteomyelitis of the Scapula

G. BIANCHI (*Arch. Ital. di Chir.*, May, 1934, p. 575), who records two illustrative cases in a boy and a girl each aged 9 years, states that osteomyelitis of the scapula is not an extremely rare condition, and should be considered in every case of violent inflammatory processes of the shoulder and back. Its rational treatment requires operation in two stages. The first consists in incision of the soft parts containing pus as early as possible, while the second stage consists in resection of the necrosed part of bone or sequestrotomy. The interval between the incision of the soft parts and the resection must be determined by the local and general conditions in each case, but must not be too long, so as not to delay the time needed for healing of the wound. Functional capacity may be restored even after extensive operations in cases in which care has been taken to preserve the periosteal sheath.

Therapeutics

201 Malaria Therapy in Dementia Paralytica

F. L. H. MACDOWEL (*Journ. Royal Navy Med. Service*, July, 1934, p. 222) cites statistical evidence in favour of his commendation of malaria therapy in dementia paralytica. In fifty cases of this disease dealt with at the Royal Naval Hospital, Great Yarmouth, before this treatment was employed 30 per cent. of the patients died within a year of admission, 46 per cent. within two years, 10 per cent. within three years, 8 per cent. within four years, 4 per cent. within five years, and 2 per cent. within six. None showed any stage of remission, and all became bed-ridden and died miserably. Of twenty-four cases subjected to malaria therapy the disease was well advanced in twenty. There were only seven deaths in the series; four of these patients showed no improvement and died within six months after the termination of the treatment, while three had good remissions lasting six, five and a half, and two years respectively. Two of these patients were capable of useful employment until a short time before death. Twelve cases showed good mental and physical improvement (50 per cent.); six had a marked degree of physical amelioration without mental change; one patient improved mentally without corresponding physical advance as regards the ataxic symptoms. The change for the better became apparent usually within a few weeks after the cessation of the pyrexia, while in some instances an amelioration of the mental symptoms was obvious during the fever. Increase in weight was immediate, and an important index as regards prognosis. The author believes that the more gradual the gain in weight the more favourable will be the result; rapid gain in weight goes with less permanent improvement. No marked serological changes were recorded.

202 Vaccine Treatment of Abdominal Actinomycosis

In treatment of actinomycosis, which in his district is usually met with as an abdominal and chiefly ileo-caecal affection, E. NEUBER (*Wien. klin. Woch.*, June 8th, 1934, p. 708) has had good results from vaccinotherapy. He finds that in the wasted patients allergic reactivity is in abeyance, so that a preliminary stimulant treatment is required. In this, injection of gold salts (solganal) is found particularly effective. In some cases malario-therapy, followed by stimulant and dietetic treatment, is a useful preliminary. The vaccine is preferably autogenous and freshly prepared; it is given intracutaneously in increasing doses, in the greatest dilution which will produce reaction in those suffering from actinomycosis but not in healthy subjects. A case is illustrated of lasting cure, with 9 kilograms increase in weight, after seven weeks' treatment by injections at four or five days' intervals.

203 Calcium Ortho-Iodoxybenzoate in Arthritis

T. WHEELDON (*Ann. Int. Med.*, June, 1934, p. 1540) has treated 282 cases of arthritis in the last two years with calcium ortho-iodoxybenzoate; the therapeutic results were most satisfactory, and there were hardly any unpleasant effects. Four tablets, each of half a grain, were administered daily by the mouth. The author gives the warning that no real improvement is manifest in less than a month. The clinical improvement is described as having been excellent in 50 per cent., fair to good in 36 per cent., and slight or none in 14 per cent. The average age of the patients was 53. A remarkable feature was the improvement noted in hypertensive and heart conditions; this is attributed to the amelioration of the general condition, but is said to be utilizable as a criterion of the effect of the drug. Joint swellings were reduced and the range of motion was increased, but the relief of pain was less evident. It is pointed out that salicylates or other analgesic drugs can be exhibited concurrently without fear of incompatibility. Laboratory investigations indicated an increase in the indican output and a lowering

of the sedimentation rate. The author is inclined to doubt whether the benefit obtained is due to any bactericidal effect or improvement of the permeability of membranes. He thinks the important factor is the drug's stimulating action on the peripheral circulation, especially in the affected joints. Patients who had been chronic invalids were restored in some cases to wage-earning employment or the resumption of household duties. The patients were also treated by the removal of foci of infection, exercises and apparatus to improve the muscular movements, dieting, measures against constipation, and the local treatment of affected joints. The average length of treatment was sixteen months.

Ophthalmology

204 Carotid Sympathectomy in Ocular Degenerations

A. MAGITOT (*Bull. de l'Acad. de Méd.*, June 12th, 1934, p. 816) points out that carotid sympathectomy, which differs from resection of the cervical sympathetic cord or of the superior cervical ganglion, consists of decortication, anterior and posterior, of some 2 cm. of the sheath of the common carotid artery. The carotid ganglion is of necessity excised. Together with Desvignes, Magitot has traced the effect of unilateral and bilateral carotid sympathectomy on the general blood pressure and that of the central retinal artery, as shown by ocular sphygmoscopy, in which pulsation of the retinal arteries is provoked by graduated pressure on the globe. Unilateral sympathectomy is followed by slow oscillations, lasting some days, of the retinal arterial pressure; bilateral sympathectomy (one side being tackled ten to twenty-five days after the other) after an oscillatory phase by a bilateral and long-lasting increase of that pressure, somewhat more marked on the side of the first intervention. The effects on pressure in the retinal arteries are not concomitant with those on humeral blood pressure. Magitot describes six cases in which bilateral carotid sympathectomy was done as treatment for insular softening of the retina or optic neuritis of non-central origin. Temporary improvement occurred in a man, aged 38, with familial optic atrophy. Notable and apparently lasting benefit followed in two cases of optic atrophy in subjects who had suffered from syphilis and malaria. In a man, aged 56, with insular retinal degenerations, vision improved from 1/25 to 4/10. In a female, aged 54, with old-standing chorio-retinitis due to congenital syphilis and recent optic atrophy, the acuity altered from 1/50 to 2/10 and from 0 to 1/20 on the respective sides. Complete restoration of vision was obtained in a case of toxic retrobulbar neuritis, probably due to carbon bisulphide poisoning. Magitot notes, as the chief encouraging sign, that a rise in the retinal arterial pressure is accompanied by improved visual function: in the weeks following operation the two vary *pari passu*, but later oscillation and even diminution of retinal arterial pressure may occur without regression of the gain in sight.

205 Intracapsular and Extracapsular Operation for Senile Cataract Compared

D. K. PISCHEL (*Amer. Journ. Ophthalmol.*, April, 1934, p. 326) cites many conflicting reports on the comparative excellence of the two operations. Such reports deal only with immediate effects, and contain amazingly wide interpretations of a good operative result. Thus some consider 24 per cent. of vitreous loss normal, and others 6/36, or even less, a good visual outcome. A useful conclusion was drawn by one writer, who obtained the same immediate visual result with the combined, the simple, and the intracapsular operations. The last were, however, all selected cases, while the combined was used for all poor risks. The present writer examined a series of cases which had been operated on in Meller's clinic at least two years previously. Forty-five "perfect" intracapsular operations, performed on an average two years and six months before examination, were compared with fifty extracapsular operations, of an average history of three years and seven months, which included all cases except those started as an intracapsular. Results showed 6/8 or better vision in 91 per cent. of the former group and in 94 per cent. of the latter. In five of the former vision was permanently lost, while in the latter in no case was useful vision or the prospect thereof lost. Thus there were more bad results in a selected series of intracapsular than in an unselected series of extracapsular operations.

206 Apparent Optic Atrophy

F. H. ALDER (*Arch. of Ophthalmol.*, June, 1934, p. 942) states that it is well known that the vision may remain normal for several months (in one case seven years) after the appearance of "optic atrophy." The loss of vision is thus not proportionate to the degree of pallor seen, though in most cases the vision is soon lost when the disk is dead white, and once lost is never regained. In certain toxic atrophies (methyl alcohol and some arsenicals) retention or recovery after total blindness of central vision is not uncommon. Further, the maintenance of the pupillary reactions and marked contraction of the nasal fields are characteristic of these toxic cases. These points are of importance in differentiating the atrophy of tabes from that of anti-syphilitic remedies. The explanation of the preservation of central vision with apparently complete atrophy in tabes may be that the condition is analogous to peripheral interstitial neuritis. The nearer the lesion is to the globe the sooner is central vision lost. A case of delayed loss of vision was found to have a chiasmal lesion at post-mortem. One must not be dogmatic about the state of the nerve fibres from the colour of the disk, which may be rendered pale by anaemia, diminution in the number of capillaries on the disk, overgrowth of glia, and, finally, actual loss of nerve fibres. Where the vision is temporarily lost in a pale disk the condition may be one of Cushing's "physiological block," which later becomes relieved, those fibres which have survived taking up their function again.

Obstetrics and Gynaecology

207 Paralysis in Eclampsia

H. SCHWANEN (*Zentralbl. f. Gynäk.*, June 16th, 1934, p. 1394) contrasts the frequency of an intracranial focus of bleeding or softening as a post-mortem finding in eclampsia with the rareness of paralysis as a clinical symptom. In explanation he finds that paralysis occurs mostly in very severe cases, in which coma leads quickly to death, so that the palsy may be overlooked; that neurological examinations are apt to be incomplete, attention being concentrated on management of the labour and circulation; and that confusion may occur with cerebral embolus. In thirty-four cases from the literature and three personal cases of eclamptic paralysis the mortality was about 50 per cent.: the palsy usually took the form of hemiplegia or monoplegia, but in one of Schwanen's cases there was evidence of meningeal haemorrhage and paralysis of the abducens. In over one-half of the cases the eclampsia was unaccompanied by convulsions. It may, he states, be concluded that the intracranial bleeding had interrupted the motor tracts—a view confirmed by certain cases in which the convulsions as they occurred affected the non-paralysed side only.

208 Determination of Foetal Size in Utero by X Rays

S. CLIFFORD (*Surg., Gynecol. and Obstet.*, June, 1934, p. 959) measures the occipito-frontal diameter of the foetal head *in utero* by stereographic radiograms. Applying "the law of uniform foetal growth ratios," as worked out by Scammon and Calkins, whereby they deduce the age in lunar months, he has constructed a graph which shows the average body weight in the last four months *in utero*, corresponding to an estimated occipito-frontal diameter. The calculations are based on measurements of 479 new-

born infants. The information is of service in deciding the date at which the infant is viable in cases where induction is called for because of maternal conditions. Interesting figures emerge. During lunar months seven and eight the foetus increases by five or six ounces per week—that is, from one to four pounds; but during lunar months nine and ten the increase is eight to twelve ounces per week, so that even a week's delay into the ninth month is of great value. The mortality of infants of five to six pounds was less than 3 per cent.; in weights lower than five pounds it was between 28 and 29 per cent. In the last two months assurance could be given of minimum weight only. While below four pounds, corresponding with 10 cm. occipito-frontal measurement, the actual weight can be forecast.

209 Pregnancy after Paralysis

H. H. WARE (*Journ. Amer. Med. Assoc.*, June 2nd, 1934, p. 1833) reports three cases of the occurrence of pregnancy in women suffering from paraplegia. In the first case complete motor and sensory paralysis below the second dorsal segment of the cord had followed a febrile attack three years previously. There was incontinence of urine and faeces. Pregnancy gave rise to no discomfort, but, owing to the abdominal muscles being flabby and the foetal breech presenting, Caesarean section was performed without anaesthesia, a healthy child being born. Apart from a few days of pyrexia, recovery was normal. The second patient had sustained a fracture-dislocation of the first lumbar vertebra, and laminectomy did not relieve the ensuing paralysis. Pregnancy followed about three years later, being uneventful except for slight nausea and vomiting during the first three months. The membranes ruptured spontaneously at term, and after considerable delay delivery was completed with forceps painlessly. In the third case the paralysis had been due to a fall which caused a compressed fracture of the first lumbar vertebra and of the transverse process, with almost complete severing of the cord. Four years later the patient became pregnant. Under procaine anaesthesia, later reinforced by nitrous oxide and oxygen, low Caesarean section was performed without complications of any magnitude. Ware concludes, therefore, that labour can occur in paralytic women, and that labour is painless. No instinctive use is made of the accessory muscles, and uterine contractions were shown to be weak in the one patient delivered from below. He believes that Caesarean section and sterilization should be performed in these cases, sometimes without an anaesthetic. The uterine and abdominal incisions heal normally. The author's three patients were unable to nurse their children.

Pathology

210 Effect of Testicular Extract on Tuberculous Infection

R. M. THOMAS and F. DURAN-REYNALS (*Proc. Soc. Exp. Biol. and Med.*, June, 1934, p. 1201) report some curious observations on the effect of testicular extract on the progress of tuberculous infection and reinfection in guinea-pigs. The increased permeability of the tissues caused by testicular extract is now well known, and it was to be expected that the incorporation of this substance with the inoculum would lead to a considerable increase in the size of the primary lesion. This in fact occurred. The testicular extract was prepared by mincing bull testicle in two volumes of saline, straining through cloth, and filtering through a Berkefeld V candle. One group of guinea-pigs was injected intradermally with a mixture of 1 c.cm. of testicle extract and 10 c.cm. of a suspension containing 0.1 mg. moist weight of human tubercle bacilli. Another group was injected with 0.1 mg. of bacilli suspended in 2 c.cm. of saline. In the testicular group the resulting lesions measured 7 to 8 cm. long and 5 to 6 cm. broad, while in the control group small nodules formed, varying from 1.5 to 2 cm. in diameter. In a second experiment the inoculations were made subcutaneously. The testicular group, when killed sixty to seventy days later, showed not only more extensive primary infection but a much greater amount of generalized tuberculosis than the control group. This was probably due to a greater spreading of the organisms in the primary lesions, and not to any systemic action of the testicular extract, since the injection of this extract alone into guinea-pigs that were already tuberculous did not appreciably affect the course of the disease. Rather different results, however, were obtained in reinfection experiments. Two groups, each containing eighteen tuberculous guinea-pigs, were reinfected four to six weeks after the primary infection, the reinfecting dose containing testicular extract in one group but not in the other. In the testicular group the local lesions following reinfection were four to five times as large as those in the controls, but when the animals were sacrificed four to six weeks after reinfection the lesions in the testicular group were found to be not nearly so advanced as those in the control reinfected or the control non-reinfected groups. The effect of testicular extract was apparently to favour primary and delay secondary infection.

211 Staphylotoxin and Staphylocoagulase

R. VANBREUSEGHEM (*C. R. Soc. de Biol.*, 1934, 116, N. 22, 650) assembles the evidence collected by different workers to show that while the various cytotoxic activities of the staphylococcus—that is to say, its effect on red blood cells, platelets, leucocytes, and tissue cells in general—are due to one and the same toxin, the coagulating effect of this organism on oxalated plasma is due to an entirely different substance. Staphylotoxin is destroyed in half an hour by exposure to a temperature of 58° C.; staphylocoagulase withstands heating to 100° C. Chamberland candles allow the toxin to pass through, while retaining the coagulase. The toxin is strongly adsorbed by red blood corpuscles; the coagulase is not. In Ramon's medium incubated in an atmosphere containing 20 per cent. CO_2 toxin is formed abundantly, while the coagulase is formed only if the culture is incubated under ordinary aerobic conditions. In Ramon's medium containing 0.1 per cent. glucose the yield of toxin is better than in the medium without glucose, but the yield of coagulase is negligible unless the reaction is kept constantly alkaline. Acid has a deleterious action on the coagulase, and leads to its partial destruction. Both by its properties and the conditions necessary for its formation the coagulase appears to be distinct from the toxin.

212 Differential Staining of Myelin in Macroscopic Sections

E. PONS TORTELLA (*Rev. Méd. de Barcelona*, June, 1934, p. 515) stresses the ease with which the grey nuclei may be effectively stained in many ways, whereas the staining of the white matter is difficult and the processes by which it is effected are few and lengthy. The technique required by the methods of Weigert and Spielmeyer is long and not precise, though the results are often beautiful; hence the writer, inspired by the success obtained by Hortega, who stains myelin in histological sections with ammonio-silver carbonate, succeeded with the same salt in evolving a most effective and rapid process of staining it in macroscopic sections. His method is as follows. Take the thinnest possible sections of brain preserved in formalin. Wash well in running water. Place in water acidulated with sulphuric acid for half to one hour. Rinse rapidly in distilled water. Submerge in solution of ammonio-pyridine-silver carbonate until the myelin is thoroughly stained. Place in 4 to 5 per cent. formol for fifteen minutes. Reduce with 5 per cent. hyposulphite of soda and mount in gelatin. The entire process takes but two or three hours. The grey nuclei remain unaltered, while all myelin is deeply stained. If the acid bath be withheld, both grey and white matter are stained. The writer holds that the acid forms with the iron of the grey nuclei a sulphate which prevents the fixation of the silver carbonate.

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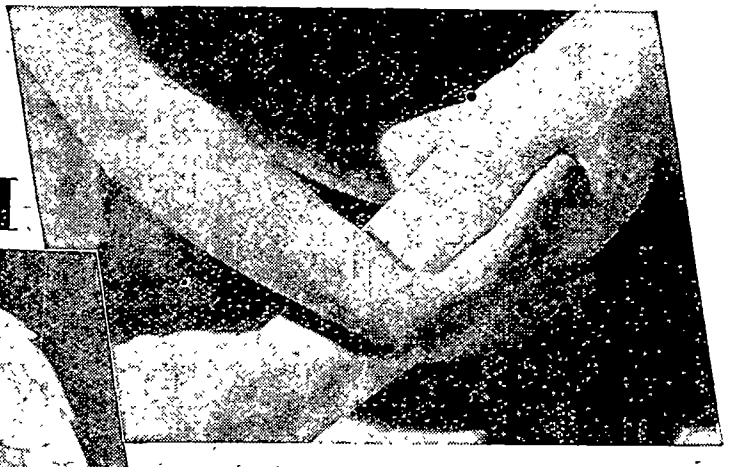

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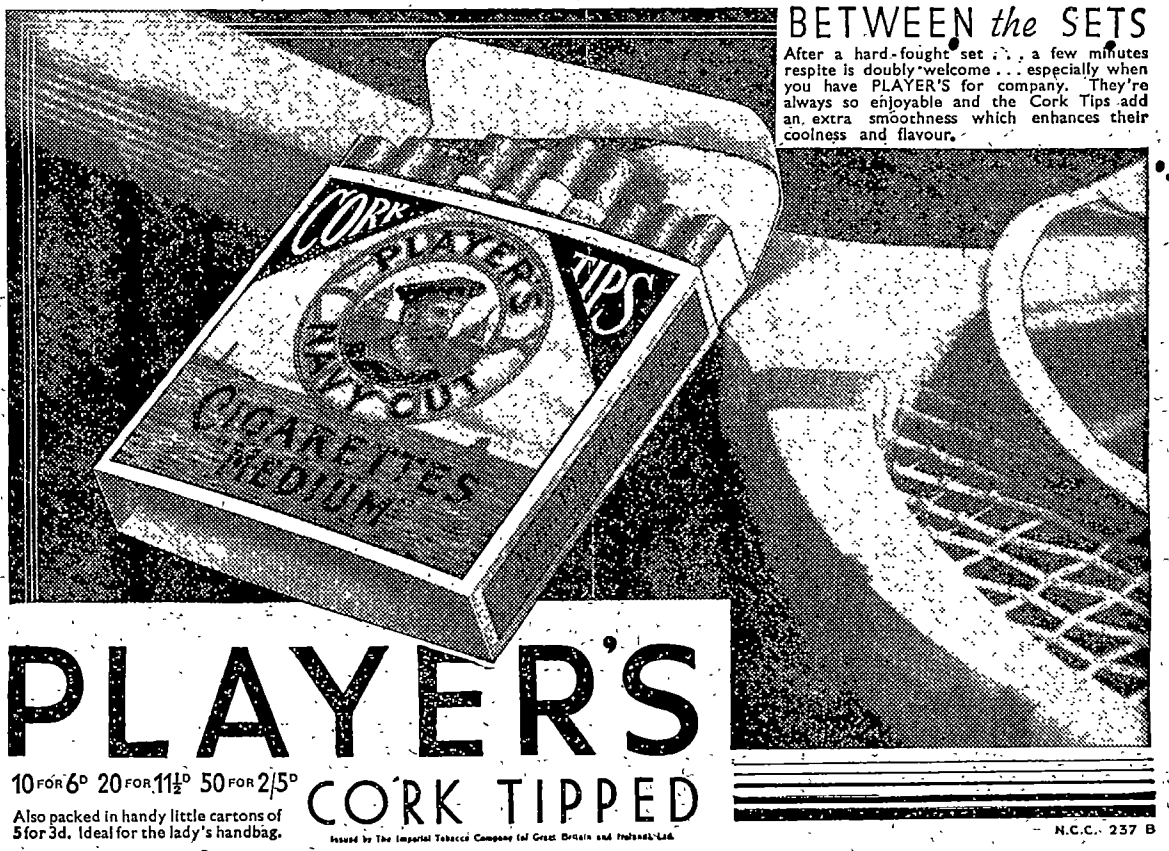

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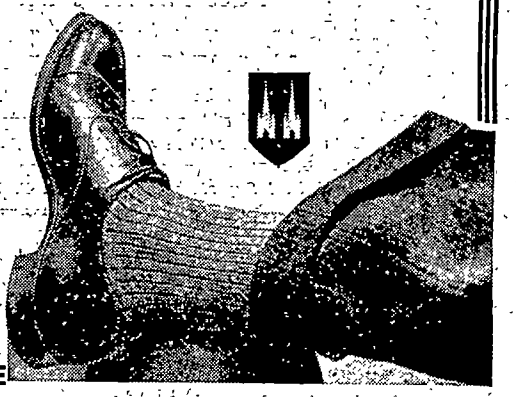

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Thurs., Oct. 4	J. R. REES, M.D. Medical Director. Psycho-therapeutic Methods. 2. Persuasion, Re-education, and Environmental Treatment.	J. A. HADFIELD, M.A., M.B. King's College, London. 1. General Psychology and Mental Mechanisms.
Mon., Oct. 8	MAURICE B. WRIGHT, O.B.E., M.D. Psycho-therapeutic Methods. 1. Analytical.	2. General Psychology and Mental Mechanisms.
Thurs., Oct. 11	Psycho-therapeutic Methods. 2. Analytical.	3. General Psychology and Mental Mechanisms.
Mon., Oct. 15	Psycho-therapeutic Methods. 3. Analytical.	4. General Psychology and Mental Mechanisms.
Thurs., Oct. 18	Professor MILLAIS CULPIN, M.D., F.R.C.S. London School of Hygiene and Tropical Medicine. Clinical Types. 1. Anxiety States.	ALICE M. HUTCHISON, M.D., M.R.C.P. Child Guidance.
Mon., Oct. 22	2. Hysteria.	ADOLPHE ABRAHAMS, O.B.E., M.D., F.R.C.P. Physician, Westminster Hospital. Physical Aspects of Psychological Illness.
Thurs., Oct. 25	3. Obsessional States.	EDWARD A. BENNET, M.C., M.D., D.P.M. The Development of Modern Psycho-therapy.
Mon., Oct. 29	4. Sex Aberrations.	ISABEL G. H. WILSON, M.D., Ch.B., D.P.M. Commissioner, Board of Control. Clinical Types. 1. Cyclothymia.
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MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the Higher Medical Examinations. Suggestions for the Higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

UNIVERSITY OF LONDON KING'S COLLEGE.

PRIMARY F.R.C.S.

A SPECIAL INTENSIVE COURSE in ANATOMY and PHYSIOLOGY in preparation for the DECEMBER EXAMINATION, will commence on MONDAY, OCTOBER 22nd, 1934, and will continue until the date of the examination.

Fees for the Course: Twelve Guineas for both subjects, Eight Guineas for either subject.

Further particulars from the Dean of the Medical Faculty, King's College, Strand, W.C.2.

UNIVERSITY OF GLASGOW.

FACULTY OF MEDICINE.

Notice is hereby given that the arrangement already proposed and advertised whereby in and after the year 1935 the period of admission of First Year students in Medicine would be April instead of October *has been cancelled*, and that the present system of admission in October will be continued.

ROBT. BROUGH,
Registrar.

August, 1934.

STAMMERING SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1880. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times."
"Thoroughly physiological principles."—"Lancet."
"The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

STAMMERING, CLEFT PALATE SPEECH, LISPING, 39 of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

SPECIALIST MOBILE X-RAY UNIT

For X-ray examination in patient's own bedroom under the control of qualified Radiographer. Senior Members of the Institute of Radiology act as Consultants to the Committee, or medical man in charge of case may appoint his own Radiologist.

HOME SERVICE AMBULANCE COMMITTEE
ORDER OF ST. JOHN & BRITISH RED CROSS SOCIETY
Tel.: Sloane 7136 12, Grosvenor Crescent, London, S.W.1

University College Hospital Medical School,

University Street, W.C.1.

WINTER SESSION commences Monday, October 1st, 1934.

Scholarships and Prizes exceeding £1,000 awarded annually, and numerous vacancies for House Appointments, also Senior Posts for Registrars, etc.

Dental School Department.

(National Dental Hospital, Great Portland Street, W.1.)

Recently reorganized and equipped on the highest standard of modern requirements.

Full particulars can be obtained on application to the Dean.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON),
Denmark Hill, S.E.5.

OPENING OF THE WINTER SESSION.

INTENSIVE POST-GRADUATE COURSE from 11 a.m. to 6 p.m. on Saturday, September 29th. The PAST AND PRESENT STUDENTS' DINNER, at which Dr. Wilfrid Attenborough will preside, will be held on Saturday, September 29th, at 7.30 for 8 p.m. at the Connaught Rooms, Great Queen Street, Kingsway, W.C.2. The Dinner Secretaries are Dr. M. Sydney Thomson and Mr. Terence Cawthorne.

On Monday, October 1st at 4.30 p.m. the Inaugural Lecture will be given by Professor William Wright, D.Sc., M.B., F.R.C.S.

J. A. DRAKE, M.D., F.R.C.P., D.P.H., Dean.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st, 1934, and January 3rd, 1935, and for the Diploma in Tropical Hygiene on January 10th and April 25th, 1935. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Laboratory Secretary, School of Tropical Medicine, Pembroke Place, Liverpool, 3.

DUNNOW HALL,

Newton-In-Bowland, Yorkshire.

A co-educational school for children who are physically or emotionally delicate, or who present special problems in development or conduct.

Modern methods under medical supervision. Own Farm.

Prospectus from the Medical Principal.

37th ANNUAL EDITION.

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An aid to Parents in the selection of Schools and Tutors.

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ADVICE ALSO GIVEN, FREE OF ALL CHARGE.

J. & J. PATON, Educational Agents, 143, Cannon Street, London, E.C.4.

F.R.C.S.(Edin.).

POSTAL and ORAL COURSES.

Oral Prep. Course for next Exam. will commence shortly. Course includes Demonstrations in Museum (Surg., Path.) Specimens and Anatomical Dissections. Postal Tuition or "Reading Courses" at any time. Further particulars, C. ORRIN, F.R.C.S., Surgeons' Hall, Edinburgh.

ROYAL EYE HOSPITAL.

D.O.M.S. INTERIM COURSE.

The next COURSE begins on Monday, October 15th. Instruction in all subjects of the examination is given in the afternoons for eight weeks on Mondays to Fridays from 2.30 to 6.30 p.m.

Composition fee: Part I, £5 5s. Part II, £10 10s.

Fees for separate subjects: £2 2s. per subject in Part I. £3 3s. per subject in Part II.

Further particulars and forms of application for admission to the Course can be obtained from the Dean.

ROYAL NAVAL DENTAL SERVICE.

The Admiralty is prepared to receive applications for commissions as DENTAL OFFICERS in the Royal Navy. Two appointments are offered.

Candidates must be below 28 years of age on November 1st (unless granted an allowance for age, not exceeding six months, in respect of a period served in a recognised whole-time civil hospital appointment) and must be registered as British Graduates or Licentiates in Dental Surgery.

Approved candidates will be required to appear before a Selection Committee at the Admiralty, and to pass a medical examination by a Board of Naval Medical Officers as to their physical fitness for entry.

A pamphlet outlining the conditions of service and the forms to be completed by candidates may be obtained on application to the Medical Director-General of the Navy, Admiralty, London, S.W.1.

Applications, accompanied by the necessary documents, must reach the Medical Director-General not later than October 1st.

JOINT NURSING AND MIDWIVES' COUNCIL, NORTHERN IRELAND.

Medical and Nursing Examiners for the Preliminary and Final State Examinations for the General Register and the Supplementary Part of the Register for Male Nurses.

The Council invites applications from (a) Medical Practitioners, and (b) Registered Nurses, who are, or have been teachers at training schools for nurses approved by the Joint Council, and who are willing to act as EXAMINERS.

Subjects: Anatomy, Physiology, Hygiene, Medicine, Surgery, Gynaecology, Venereal and Genito-Urinary Diseases, and Nursing.

Particulars and application forms obtainable from the Registrar, 118, Great Victoria Street, Belfast, to whom all applications should be sent not later than October 30th.

JOINT NURSING AND MIDWIVES' COUNCIL, NORTHERN IRELAND.

Medical and Nursing Examiners for the Final Examination for Sick Children's Nurses.

The Council invites applications from (a) Medical Practitioners, and (b) Registered Nurses, who are, or have been teachers at training schools for nurses approved by the Joint Council, and who are willing to act as EXAMINERS for the above examination.

Subjects: Medicine, Infant Feeding, Surgery, Children's Diseases and Nursing.

Applications should be sent not later than October 30th, to the Registrar, 118, Great Victoria Street, Belfast, from whom particulars and application forms are obtainable.

JOINT NURSING AND MIDWIVES' COUNCIL, NORTHERN IRELAND.

Medical and Nursing Examiners in Infectious Diseases for the Final Examination.

The Council invites applications from (a) Medical Practitioners, and (b) Registered Nurses, who are, or have been teachers in nursing and are willing to act as EXAMINERS for above Examination.

Subjects: Fevers and Fever Nursing.

Particulars and application forms obtainable from the Registrar, 118, Great Victoria Street, Belfast, to whom all applications should be sent not later than October 30th.

BOROUGH OF CHEPPING WYCOMBE.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH, SCHOOL MEDICAL OFFICER, MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE, AND POLICE SURGEON.

Applications are invited for the above appointment at a salary of £800 per annum.

The gentleman appointed will be required to devote the whole of his time to the duties of the office.

The appointment will be subject to the approval of the Minister of Health, the Board of Education, and the Secretary of State for the Home Department, and to the provisions of the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926, and the successful candidate will be required to pass a medical examination.

Forms of application and particulars of appointment may be obtained from the undersigned, to whom they must be returned, accompanied by copies of not more than three recent testimonials, and endorsed "Medical Officer of Health," not later than Monday, Oct. 15th.

Canvassing, either directly or indirectly, will be deemed a disqualification.

PHILIP B. BEECROFT, Town Clerk.
Municipal Offices, High Wycombe.
September 11th, 1934.

LANCASHIRE COUNTY COUNCIL.

BIDDULPH GRANGE ORTHOPAEDIC HOSPITAL.

Applications are invited from duly qualified and registered Medical Practitioners for the post of JUNIOR HOUSE SURGEON at the above Hospital, which contains 88 beds.

Salary is at the rate of £150 per annum, together with board, residence, and laundry.

Preference will be given to candidates who have held resident hospital appointments and who are competent anaesthetists. The appointment will be for a period of six months in the first instance, and for a further six months at the option of the Council, but will not be renewable after that time.

Applications, with copies of two recent testimonials, should be sent not later than October 6th, to Dr. J. J. BUTTERWORTH, School Medical and Child Welfare Department, County Offices, Preston.

Duties to commence as early as possible.

County Offices, Preston. GEORGE ETHERTON, Clerk of the County Council.
September 17th, 1934.

CITY AND COUNTY OF THE CITY OF CHESTER.

APPOINTMENT OF DEPUTY MEDICAL OFFICER OF HEALTH AND DEPUTY SCHOOL MEDICAL OFFICER.

Applications are invited from duly registered Medical Practitioners of not more than 35 years of age for the above appointment.

Salary in accordance with the scale approved by the British Medical Association, commencing at £500 per annum, and rising by annual increments of £25 to a maximum of £700 per annum, together with a car allowance of £50 per annum. Further particulars of the duties, terms, and conditions of the appointment, and application form, can be obtained from the undersigned.

Applications (to be made on the form provided) are to be endorsed "Deputy Medical Officer of Health," and delivered to the undersigned not later than October 5th.

Canvassing, directly or indirectly, will be a disqualification.

Town Hall, Chester. J. H. DICKSON, Town Clerk.
September 12th, 1934.

CITY OF SHEFFIELD.

CITY GENERAL HOSPITAL.

JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified Medical Men for the appointment of Junior Assistant Medical Officer at the above Hospital.

The Medical Officer appointed will be required to take duty in the Medical, Surgical, or Maternity Departments as directed by the Medical Superintendent.

The appointment will be for one year only, and the salary offered is £200 per annum, with the usual residential allowances.

Previous hospital experience is desirable.

Applications should be sent to the Medical Superintendent, City General Hospital, Sheffield, 5, accompanied by not more than three testimonials of recent date.

ROYAL EYE HOSPITAL, St. George's Circus, S.E.1.

Applications are invited for the Royal Eye Hospital RESEARCH SCHOLARSHIP. Value £100 per annum. Applications are to be received by November 14th.

For further particulars apply to the Dean.

ANCOATS HOSPITAL, MANCHESTER.

ASSISTANT PATHOLOGIST (Lady or Gentleman). Whole-time appointment, no private work allowed. Salary £300 to £350, according to experience, live out. Luncheon and tea provided.

MEDICAL REGISTRAR (Lady or Gentleman). To assist the Honorary Physician in the Out-patient department on Monday, Wednesday, and Thursday mornings. Honorarium £60 per annum. Appointment for 12 months, renewable on January 1st of each year.

RESIDENT MEDICAL OFFICER to commence duty on October 1st. One having held a previous appointment essential. Appointment for six months. Salary at the rate of £150 per annum, with board, residence, laundry, etc.

HOUSE PHYSICIAN to commence duty on October 1st. Duties include charge of a few medical beds and some casualty work. Appointment for six months. Salary at the rate of £100 per annum, with board, residence, laundry, etc.

Applications are invited for the above posts from duly qualified and registered Medical Practitioners. Applicants should state age, qualifications, experience, and give full particulars and forward their applications as early as possible but not later than September 26th, together with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE.
General Supt. & Secretary.

CASSEL HOSPITAL FOR FUNCTIONAL NERVOUS DISORDERS
Swaylands, Penshurst, Kent.

MEDICAL DIRECTOR (MALE).

Applications are invited for the post of Medical Director. Candidates must be fully qualified and have had experience in the treatment of functional nervous disorders. Whole-time appointment. Salary £1,000, rising to £1,200, with unfurnished house, containing 6 bedrooms and 3 sitting rooms, kitchen, bath-room, and offices, electric light. Candidates must supply details as to age, civil state, etc., and give a full record of experience with names of two references.

Applications, in envelope marked "Medical Director," to be sent not later than October 15th, to the Chairman, Cassel Hospital, Swaylands, Penshurst, Kent.

Will those who applied three months ago and who still wish to be candidates please send a letter to this effect.

ROYAL UNITED HOSPITAL, BATH.

OUT-PATIENT AND CASUALTY OFFICER required.

The appointment offers opportunity of experi- in Medicine and Surgery.

Salary £150 per annum, with board, residence, and laundry.

Appointment for six months, and candidates must be male, unmarried, and of British nationality.

Applications, with copies of three testimonials, to be addressed to the undersigned by Oct. 4th.

J. LAWRENCE MEARS,
Sept. 17th, 1934. Secretary-Supt.

ROYAL UNITED HOSPITAL, BATH.

HOUSE SURGEON required at once. Duties include general Surgical, and Ear, Nose, and Throat work. Salary £150 per annum, board, residence, and laundry.

The appointment is for six months, and candidates must be male, unmarried, and of British nationality.

Applications, with copies of three testimonials, to be addressed to the undersigned immediately.

J. LAWRENCE MEARS,
Sept. 17th, 1934. Secretary-Supt.

ABERDEEN ROYAL INFIRMARY.

Applications are invited for the post of SENIOR RESIDENT OFFICER in the Aberdeen Royal Infirmary. Candidates should have at least twelve months general hospital experience.

Full particulars as to the terms of appointment and duties may be obtained from the undersigned, with whom applications and testimonials (four copies) should be lodged on or before Friday, October 5th.

JOHN A. McCONACHIE,
230, Union Street, Clerk and Treasurer.
Aberdeen. September 18th, 1934.

ALTRINCHAM GENERAL HOSPITAL.
(100 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male). Salary at the rate of £150 per annum, with board, etc., to commence duty as soon as possible, six months' appointment. Applications, stating age, nationality, experience, etc., to be addressed to the undersigned.

E. A. BIDEN, Secretary.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications for the following posts:

ASSISTANT RESIDENT MEDICAL OFFICERS. Vacancies for both Senior and Junior posts. The duties of the Senior include that of Assistant to the Surgeons to the Hospital. Candidates must have held a resident hospital appointment for not less than six months. Salary £150 per annum, with board and residence. The appointments are for twelve and six months respectively.

HOUSE PHYSICIANS. There are three vacancies for House Physicians. The duties include work in the Out-patient Department as well as in the Wards, and one of the selected candidates will also be appointed Assistant to the Tuberculosis Officer for the Local Tuberculosis Dispensary at the Hospital. The appointment is for six months, commencing November 1st, with an honorarium of £50.

HOUSE PHYSICIAN (Male) at the SANATORIUM at FRIMLEY. The appointment is for six months, commencing November 1st, with an honorarium of £50.

Applications, with copies of testimonials, must reach the undersigned not later than Saturday, October 6th.

FREDERICK WOOD, Secretary.
Brompton. September, 1934.

ST. MARY'S HOSPITAL, W.2.

CASUALTY HOUSE SURGEON.

Applications are invited from duly qualified candidates for the post of Casualty House Surgeon.

Candidates must have been House Surgeons for a full period of office to this Hospital or to some other General Hospital approved by the Board.

The salary is £100 per annum, with board and residence, and the appointment is for six months.

Applications, with copies of testimonials, not exceeding three in number, should reach the undersigned (from whom particulars of the office may be obtained) on or before Wednesday, September 26th.

The successful candidate will be expected to take up the duties on October 1st.

W. PARKES, House Governor.

ROYAL SOUTHERN HOSPITAL, LIVERPOOL.

WANTED.

ONE MEDICAL OFFICER to the Special Departments and RESIDENT ANAESTHETIST (dual appointment). Salary £60 per annum, including board and residence.

ONE RESIDENT CASUALTY OFFICER. Salary £100 per annum, including board and residence.

The appointments will be for six months, duties commencing as from October 1st.

Applications and copies of testimonials, to be sent to the undersigned at once.

FRANK SOLMAN, Supt. & Secretary.

ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY, WIGAN.

A vacancy occurs for an HONORARY ASSISTANT PHYSICIAN who must be legally registered to practise Medicine and Surgery and reside preferably within six miles of the Infirmary. Applications, with copies of two recent testimonials, stating age, qualifications, etc., to reach the undersigned (from whom further information can be obtained) by Monday, October 8th.

Canvassing, directly or indirectly, is forbidden.

By Order of the Board of Management,
A. STANLEY BRUNT,
Sept. 13th, 1934. Gen. Supt. & Secretary.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, BRIGHTON. (100 Beds.)

HOUSE SURGEON (Male) required. Salary at the rate of £120 per annum, with board, lodging, and washing. Good experience, including sun-ray treatment. No canvassing. To commence duties immediately. Applications, in writing, accompanied by testimonials, should be sent to PERCY F. SPOONER, Secretary, Dyke Road, Brighton.

September 13th, 1934.

EAST SUFFOLK AND IPSWICH HOSPITAL.
(322 Beds—7 Residents.)

Wanted, November 1st, TWO HOUSE SURGEONS (Male, British). Salary at the rate of £120 per annum. Applications, stating age, qualifications, and experience, together with copies of three recent testimonials, to be sent to the undersigned before October 9th.

The Hospital, ARTHUR GRIFFITHS,
Ipswich. Secretary.

DERBY CITY HOSPITAL.

THIRD RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Third Resident Medical Officer (male) at the above Hospital of 300 beds. This Hospital provides treatment for acute medical and surgical cases, tuberculosis, obstetrics, and children's diseases, etc.

Candidates must be registered in Medicine and Surgery.

The appointment is for a period of six months; which may be extended to twelve months; two months' notice of resignation to be given and the successful candidate will be required to commence duty on or about November 1st.

Salary at the rate of £200 per annum, with board and residence, subject to temporary economy deduction in force.

Applications, stating age, experience, and accompanied by three recent testimonials, should be sent not later than Wednesday, October 3rd, to the undermentioned.

Public Health Dept., GORDON LILICO,
Derwent Street, Medical Officer of
Derby. Health.

ROYAL MANCHESTER CHILDREN'S HOSPITAL, PENDLEBURY, near MANCHESTER. (190 Beds.)

A RESIDENT SURGICAL OFFICER wanted. Salary £125 per annum, who will be appointed for six months. Duties to commence November 1st. Candidates must be unmarried and duly registered. Previous hospital experience essential. A Fellow of one of the Royal Colleges of Surgeons would receive preference.

Applications, stating age and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than Thursday, October 4th. Canvassing, directly or indirectly, may disqualify.

By Order,
W. H. HUMPHRY, Secretary.

PADDINGTON GREEN CHILDREN'S HOSPITAL (Incorporated), London, W.2.

HOUSE PHYSICIAN.
HOUSE SURGEON.

These appointments will become vacant on November 1st. Gentlemen (unmarried) are invited to send in their applications, with copies of three testimonials, to the undersigned not later than Friday, October 12th. Salary of each at the rate of £150 per annum, with board and residence. Candidates who have held a responsible Resident Hospital appointment are preferred. The appointments are for a period of six months.

JAMES A. HAMLIN, Secretary.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.13.

Applications are invited for the posts of RESIDENT and ASSISTANT RESIDENT MEDICAL OFFICERS (vacant November 1st), male or female. The appointments are for six months, and will expire on April 30th next. Board and residence are provided. Salaries at the rate of £175 and £120 per annum respectively, including £5 allowance for laundry. The duties of the R.M.O. are mainly surgical, and those of the A.R.M.O., mainly medical. Personal canvassing not desired. Applications, with copies of three recent testimonials, to be sent to the undersigned not later than October 2nd.

A. ERNEST WILKES, Secretary.

ROYAL DEVON & EXETER HOSPITAL, EXETER.

HOUSE SURGEON (Male) to the Ear, Nose, and Throat Department.

Applications are invited for this post which becomes vacant on Monday, October 1st.

The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £150 per annum, with board, lodging, and washing.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned on or before Monday, 24th inst.

S. S. COLE,
Sept. 14th, 1934. Secretary & Manager.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS,
Victoria Park, E.2.
(Bus, Tram, and Rail, Cambridge Heath, L. & N.E. Railway.)

A vacancy for a HOUSE PHYSICIAN (Male) will occur on November 1st. Six months' appointment. Salary at the rate of £100 per annum. Board, residence, and laundry provided.

Applications, with copies of three testimonials, should be sent to the undersigned on or before Friday, October 19th.

GEORGE WATTS, Secretary.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be European British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after one year's Indian Service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

NOTE.—It is not possible to state at present what, if any, prospects of employment on the civil side will be open to Indian Medical Service Officers under the proposed new constitution for India.

MONTHLY RATES OF PAY.

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Year of Total Service.
		Rs.	Rs.	
Lieut.	—	500	150	1st
Capt.	(i) During first 3 years' service as Captain	650	150	2nd
			150	3rd
			150	4th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£15	5th
			£15	6th
			£25	7th
			£25	8th
	(iii) With more than 6 years' service as Captain	850	£25	9th
			£25	10th
			£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

NOTE.—Owing to the state of financial emergency at present prevailing in India the above rates are subject to a temporary reduction of 5 per cent.

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to one year.

OUTFIT ALLOWANCE.

Officers on appointment will receive an allowance of £50 towards the cost of outfit.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil; and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

LEAVE.

Leave can be taken at reasonable intervals, and adequate rates of leave pay are provided. Extra leave (known as study leave), which may not exceed 12 months in all during an officer's service, may be granted to officers desirous of pursuing special courses of study of a post-graduate nature. During such leave, study allowance, at present fixed at the rate of 12s. a day in the United Kingdom, £1 a day on the Continent of Europe, and £1 10s. a day in the United States of America, is granted to an officer in addition to ordinary rates of leave pay.

PENSIONS.

The rates of pension are as follows:

	Per annum £
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all. With effect from July 1st, 1934, a reduction of 7½ per cent. is being made on this account.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with free passage to India. The families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately three months, prior to their embarkation for India on first appointment. Information as to the rates of pay admissible during this period and subsequently up to arrival in India is contained in the memorandum referred to below.

A memorandum giving full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. The Selection Committee will meet at the India Office early in October next, and the selected candidates will be required to join a course of instruction commencing early in November, 1934, prior to sailing for India early in 1935. Applications should be submitted as soon as possible.

THE WILLESDEN GENERAL HOSPITAL, Harlesden Road, N.W.10.

Applications are invited from fully qualified and registered candidates (unmarried) for the appointment of a Resident Officer, to hold the appointment of CASUALTY OFFICER for a period of three months from October 1st, followed by a *six months'* appointment as HOUSE PHYSICIAN. (Total nine months.)

Salary at the rate of £100 per annum.

Applications to be received by the Secretary not later than first post on *Monday*, September 24th.

September 1st, 1934.

WIMBLEDON HOSPITAL, Thurstan Road, S.W.20. (General Hospital—74 Beds.)

RESIDENT MEDICAL OFFICER (Male) required for a period of six months in the first place from October 1st, eligible for re-election. Salary at the rate of £150 per annum, with board, residence, and laundry.

Candidates must possess registered qualifications.

Applications, stating qualifications and experience, together with copies of testimonials, should be sent to the undersigned.

PERCY S. GAUNTLETT, Hon. Sec.

THE ROYAL BUCKINGHAMSHIRE HOSPITAL, AYLESBURY. (80 Beds.)

Applications are invited for the post of SECOND RESIDENT MEDICAL OFFICER (male) for six months, to commence duty as soon as possible.

Salary £150 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials should be sent to the undersigned.

M. W. BROWN,

September 14th, 1934. Secretary.

MONTAGU HOSPITAL, MEXBOROUGH, YORKS.

Applications are invited for the position of JUNIOR HOUSE SURGEON (lady) at the above Hospital. Commencing salary £100 per annum, with 1 month holiday annually. The usual board-residence is also found. The Hospital has 64 *Surgical beds*, and 20 *Maternity* beds. Applicants should state their experience in the administering of Anaesthetics, and give the earliest date they will be at liberty to take up duties. Applications should be forwarded to the undersigned, together with testimonials, at the earliest possible moment.

DONALD WILSON, Secretary.

RADCLIFFE INFIRMARY AND COUNTY HOSPITAL, OXFORD.

Applications are invited for the post of RESIDENT SURGICAL OFFICER, which will become vacant on October 1st next.

The appointment will be for twelve months with a salary at the rate of £200 per annum, with board, etc.

Candidates must be male.

Applications, with four copies of three testimonials, must be sent to the undersigned, not later than September 25th.

A. G. E. SANCTUARY, Administrator.

RADCLIFFE INFIRMARY AND COUNTY HOSPITAL, OXFORD.

Applications are invited for the post of HONORARY ASSISTANT ANAESTHETIST.

The post carries with it an honorarium of £50 per annum.

Twenty-five copies of applications and testimonials, which will be forwarded to members of the electing committee must be sent to the *undersigned*, from whom further particulars may be obtained, not later than Tuesday, September 26th.

A. G. E. SANCTUARY, Administrator.

BRISTOL ROYAL INFIRMARY.

Applications are invited for the post of ASSISTANT to the Cancer Research Department. Salary at the rate of £300 per annum. Candidates must be qualified and some pathological experience is desirable. Applications, stating age and accompanied by copies of not more than three testimonials, to be sent to the undersigned.

ELLIS G. SMITH, F.C.I.S.,
Secretary & House Governor.

BURTON-ON-TRENT GENERAL INFIRMARY.

Applications are invited for the position of THIRD HOUSE SURGEON (Male). Salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of testimonials, to be sent to— E. W. THORNLEY, Secretary.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL.

SURGICAL REGISTRARS.

The Committee invite applications for the appointments of Three Registrars (male) as from November 1st. Candidates who have obtained the F.R.C.S.Eng. will be preferred. Honorarium £105 p.a. The appointments are for twelve months, renewable for a further twelve months on the recommendation of the Medical Board. *Applications, with copies of three recent testimonials*, should reach the Secretary, 234, Great Portland Street, London, W.1, not later than October 10th.

ROYAL SUSSEX COUNTY HOSPITAL, BRIGHTON. (Beds 250—Six R.M.O.s.)

CASUALTY HOUSE SURGEON (Male) required to commence as soon as possible.

Salary £120 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts.

They must be unmarried and when elected under 30 years of age.

Applications, with copies of recent testimonials, to be forwarded to the undersigned.

L. L. W. LANCASTER-GAVE,
Secretary-Superintendent.

TAUNTON AND SOMERSET HOSPITAL, TAUNTON. (104 Beds.)

SENIOR HOUSE MEDICAL OFFICER (Male) required October 19th. Charge of Surgical Beds. Three residents on Staff. Applicants must have held a resident hospital appointment for six months. Appointment (six months with option of applying for re-election) approved by University of London for purposes of M.S. Examination. Salary at the rate of £150 per annum, and retention of certain fees.

Applications, with copies of three recent testimonials, by October 2nd, to F. J. J. STACEY, Secretary.

HERTFORD COUNTY HOSPITAL.

Applications are invited for the post of HOUSE SURGEON (Male). Salary £200 per annum, with board, residence, and laundry. The appointment is for six months in the first instance. Commencing October 1st.

Applications, with three recent testimonials, should be sent to the undersigned not later than September 25th.

PERCY G. BROOKS, Secretary.

HERTFORD COUNTY HOSPITAL.

Applications are invited for the post of HOUSE PHYSICIAN (Male). Salary £150 per annum, with board, residence, and laundry. Duties to include Casualty, Obstetrics, and some Surgical work. The appointment to be for six months in the first instance commencing October 1st.

Applications, together with copies of three *recent testimonials, should be forwarded to the* undersigned not later than September 25th.

CHARING CROSS HOSPITAL.

There is a vacancy for an HONORARY CLINICAL ASSISTANT in the Radiological and Electro-Therapeutics Dept.

The rules of the office may be obtained from the undersigned.

Candidates should have by preference the *qualification D.M.R.E.(Camb.), and applications* accompanied by copies of three recent testimonials, should be sent not later than Oct. 1st.

PHILIP INMAN, Managing Governor.

THE GENERAL INFIRMARY AT LEEDS.

RADIO-SURGICAL HOUSE SURGEON (male or female). Applications are invited for the above post. Salary £100 per annum, with board, residence, and laundry.

The appointment is for six months, subject to renewal. Candidates must be legally qualified and registered.

Applications, with copies of testimonials, to be sent *in at once to the undersigned.*

S. CLAYTON FRYERS,
House Governor & Secretary.

KENT AND CANTERBURY HOSPITAL, CANTERBURY. (137 Beds.)

HOUSE SURGEON (Male) required to commence duties at end of September. Six months' appointment. Salary payable at the rate of £125 per annum, plus board, residence, and laundry. There are two other Resident Medical Officers. Duties include care of Ear, Nose, and Throat cases.

Applications, stating age, and particulars of *qualifications, and enclosing copies of testi*monials, should be forwarded to the undersigned as soon as possible.

J. F. KENT, Supt. & Secretary.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES. (54 Beds. 14,500 Out-patients per annum.)

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for six months from October 1st. Salary at the rate of £100 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester.

JOHN NALL, Secretary.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.1.

Applications are invited from duly qualified and registered *Medical Women for the post of* RESIDENT CASUALTY OFFICER. Previous experience as Hospital Resident essential. Salary £150 per annum. Intending candidates should submit applications, stating age and accompanied by copies of three recent testimonials, to the undersigned on or before October 7th. The appointment is tenable for six months from November 1st.

RICHARD F. BARTLEY,
Acting Secretary.

ABERDEEN CITY MENTAL HOSPITAL, KINGSEAT, NEWMACHAR.

Applications are invited for the post of JUNIOR ASSISTANT MEDICAL OFFICER (Male). Salary £300 per annum, with board, residence, and laundry. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909. Applications, stating age and qualifications, with copies of recent testimonials, should be sent to the Medical Superintendent.

BIRKENHEAD GENERAL HOSPITAL. (156 Beds.)

Applications are invited for the position of CASUALTY OFFICER (Male) for the six months commencing October 1st. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, nationality, and qualifications, together with three recent testimonials, to reach the undersigned as early as possible.

W. H. DANIELS, F.C.I.S.,
Secretary-Superintendent.

MERTHYR GENERAL HOSPITAL. (118 Beds.)

HOUSE SURGEON required for a period of six months.

Applications, stating age, nationality, and qualifications, with three recent testimonials (copies only), to be sent to the Hon. Secretary of the Hon. Medical Staff at the above. Salary at the rate of £150 per annum, with board, furnished rooms, and laundry.

Duties to commence at once.

LOWESTOFT AND NORTH SUFFOLK HOSPITAL.

JUNIOR HOUSE SURGEON (male) required. Salary at the rate of £120 per annum, with board, residence, and laundry. Medical and surgical qualifications required.

Eligible for Senior post at £150 per annum after a period of satisfactory service.

Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, 60, Grove End Rd., N.W.8.

Applications are invited for the post of RESIDENT HOUSE SURGEON (Male). The appointment will be for six months from November 1st. Salary at the rate of £75 per annum, with full board. Applications, together with copies of three testimonials, should reach the undersigned not later than the first post on Friday, September 28th.

F. DUDLEY HOBBS, Secretary.

CONSUMPTION SANATORIA OF SCOTLAND, BRIDGE OF WEIR (near Glasgow). Orphan Homes of Scotland. Colony for Epileptics.

TWO RESIDENT MEDICAL OFFICERS wanted, one male and one female, Protestant. Salary £200 to £250, all found. References as to character and previous experience to be sent to the Medical Superintendent.

KING'S COLLEGE HOSPITAL.

The Committee of Management invite applications for the post of JUNIOR SURGEON. Applications, with copies of three testimonials, *should be sent before October 12th*, to the House Governor, Kings' College Hospital, Denmark Hill, S.E.5, from whom particulars of the duties may be obtained.

APPOINTMENTS.—Important Notice.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE.** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CITY OF SALFORD. *(Resident Obstetric Officer, Hope Hospital.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CITY OF SALFORD EDUCATION COMMITTEE *(Assistant School Medical Officer.)*
LLANELLY AND DISTRICT WORKMEN'S MEDICAL COMMITTEE. *(All Medical Appointments.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	CITY OF STOKE-ON-TRENT EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
LLWYNPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH**	COUNTY BOROUGH OF TYNEMOUTH. *(Assistant Medical Officer of Health—Male.)*
LOWESTOFT MEDICAL INSTITUTE. *(Medical Officer.)*	CORNWALL COUNTY COUNCIL. *(Medical Superintendent—Tehidy Sanatorium, Cornwall.)*	**PUBLIC ASSISTANCE**
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	COUNTY COUNCIL OF KINCARDINE. *(Deputy Medical Officer of Health.)*	COUNTY BOROUGH OF BARROW-IN-FURNESS. *(District Medical Officer.)*

(b) Overseas.

Medical practitioners are requested **not to apply** for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. J. G. HUNTER (Medical Secretary, New South Wales Branch), 135, Macquarie St., Sydney, N.S.W.	**QUEENSLAND.** *(Brisbane Associate Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**WELLINGTON, NEW ZEALAND** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. J. P. MAJOR (Hon. Sec., Victorian Branch), British Medical Association; Medical Society Hall, East Melbourne, Victoria.			**WESTERN AUSTRALIA** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association; "Shell House," 205, St. George's Terrace, Perth, Western Australia.

September 19th, 1934. By Order of the Council. G. C. ANDERSON, Medical Secretary.

THE LONDON LOCK HOSPITAL, 283, Harrow Road, W.9.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (either sex) to the Female Departments. Candidates must be doubly qualified and duly registered. The appointment is for six months commencing October 5th. Salary at the rate of £175 per annum, with furnished rooms, full board, and laundry. Preference will be given to candidates having previous Obstetric experience. Applications, enclosing copies (only) of three recent testimonials, must be in the hands of the undersigned by 10 a.m. on Wednesday, September 26th; and from whom a copy of the Bye-laws relating to the appointment, or any further particulars, can be obtained.

By Order of the Board,
J. F. MORTON,
September 4th, 1934. Secretary.

LONDON LOCK HOSPITAL, 91, Dean Street, W.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER to the Male Departments. Candidates must be doubly qualified and duly registered. The appointment is for six months commencing October 5th. Salary at the rate of £175 p.a., with furnished rooms at the Harrow Road Hospital; full board and laundry. Applications, enclosing copies (only) of three recent testimonials, must be in the hands of the undersigned by 10 a.m. on Wednesday, September 26th, and from whom a copy of the By-laws relating to the appointment, or any further particulars, can be obtained.

By Order of the Board,
J. F. MORTON,
September 4th, 1934. Secretary.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond Street, London, W.C.1.

A HOUSE PHYSICIAN and a HOUSE SURGEON are required on October 14th and 18th respectively.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock, on Monday, October 1st, with copies of not more than three testimonials given specially for the purpose; and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum; laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, October 3rd, at 5 p.m. precisely.

Forms of application and copies of the Rules may be obtained from the Secretary.

HERBERT F. RUTHERFORD,
August, 1934. Secretary.

TORBAY HOSPITAL, TORQUAY. (146 Beds.)

HOUSE SURGEON (Male) required as soon as possible. Salary £175 per annum, with board, residence, and laundry allowance. Candidates must be fully qualified, registered, and unmarried.

Applications, stating age, nationality, qualifications, and experience to be sent to the undersigned, with copies of not more than three recent testimonials.

E. L. GRIST,
September 13th, 1934. Secretary.

ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE, AND UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

Applications are invited from registered Medical Practitioners for the joint post of JUNIOR ASSISTANT in the Pathological Department of the Royal Victoria Infirmary and DEMONSTRATOR in the University of Durham College of Medicine, Newcastle-upon-Tyne.

Salary is at the rate of £300 per annum.

Applications, stating previous experience, with copies of three recent testimonials, must be forwarded on or before September 30th, to the House Governor and Secretary, Royal Victoria Infirmary, Newcastle-upon-Tyne, from whom further particulars may be obtained.

S. DUNSTAN,
Sept. 8th, 1934. House Gov. & Secretary.

THE HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.9.

A RESIDENT MEDICAL OFFICER required November 1st.

HOUSE PHYSICIAN required November 1st.

Applications are invited for these posts. The salaries are at the rate of £150 and £100 per annum respectively, and the appointments are for six months. Candidates for the post of Resident Medical Officer should state if they are willing to take that of House Physician, and applications, accompanied by copies of three recent testimonials, should reach me by September 29th. The accommodation at the Hospital does not permit of Women Graduates holding these appointments.

H. W. BURLEIGH,
Secretary and General Supt.

(Appointments continued on p. 42)

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ASSISTANCIES.

WANTED, AN ASSISTANT IN A COLLIERY Practice in Glamorganshire. A Dispenser kept. Salary £300 per annum, indoors.—Address, stating age, references, etc., No. 5668, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — ASSISTANT, INDOOR, MALE, single, for nice country Practice, Shropshire. Suit recently qualified man. Car allowance if own car. £300 p.a. State age, nationality, etc., photo., reference. — Address, No. 5764, B.M.A. House, Tavistock Square, W.C.1.

WANTED.—ASSISTANT, OUTDOOR, MALE, single, English, Scotch, or Irish. (County Town, Cheshire). Saloon car for use in Practice. Dispenser kept. Usual bond. Salary according to experience. — Address, No. 5670, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — ASSISTANT, YOUNG, ENERgetic, cyclist, single. Commencing £250. Indoor. Usual bond. — Address, No 5656, B.M.A. House, Tavistock Square, W.C.1.

WANTED, A YOUNG MALE INDOOR ASSISTANT for General Practice in Northumberland and near Newcastle-on-Tyne. Salary £325 p.a. Applicants to state age and nationality, and furnish two recent tests.—No. 5577, B.M.A. House, Tavistock Sq., W.C.1.

WANTED, A YOUNG UNMARRIED MALE outdoor ASSISTANT for Colliery Practice near Newcastle-on-Tyne. Salary £400 p.a., furnished house, coals, light, and attendance. Applicants to state age and nationality, and furnish two recent testimonials.—Address, No. 5578, B.M.A. House, Tavistock Square, W.C.1.

WANTED. BY M.R.C.S., L.R.C.P.(LONDON), L.M., preliminary ASSISTANTSHIP, definite view London, or any other good locality. No experience G.P. Capital available.—Address, No. 5757, B.M.A. House, Tavistock Sq., W.C.1.

WANTED BY WOMAN, M.B., CH.B., OUTDOOR ASSISTANTSHIP with prospects. Pref. in or near London. Aged 30. Experienced Hospital and General Practice, panel and private. — Address, No. 5765, B.M.A. House, Tavistock Square, W.C.1.

WANTED EARLY IN OCTOBER, MALE ASSISTANT, indoor, for mixed Practice in London. Scottish or English Graduate, with hospital experience, preferred. Full particulars and photo.—Address, No. 5771, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY FOR MIDLANDS, indoor ASSISTANT, male, unmarried, able to drive car. Salary £300 to experienced man. — Address, No. 5766, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY. — INDOOR AND Outdoor ASSISTANTS (with and without view to partnership), and LOCUM TENENTS (male and female) for Town and Country Practices. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester, 2.

WANTED IMMEDIATELY, MALE, SINGLE, indoor ASSISTANT for Glamorgan Colliery Practice. Salary £300 p.a., all found, plus £50 car allowance.—Address, No. 5658, B.M.A. House, Tavistock Square, W.C.1.

WANTED IMMEDIATELY, MALE, SINGLE, Outdoor ASSISTANT for Glamorgan Colliery Practice. Cottage Hospital. Salary £400 p.a., with rooms and attendance.—Address, No. 5657, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — INDOOR ASSISTANT (SCOTSman preferred) for Practice, Seaport Town in South Wales. Abstainer and able to drive car. Salary £300 p.a. — Address, No. 5768, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — INDOOR MALE ASSISTANT, married or single, for seaside Practice. Must be temperate, reliable, not over 35, Cyclist. Irish, Scotch, or English. Usual bond. Salary £250 p.a.—Address, No. 5674, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — OUTDOOR ASSISTANT IN small country town, to manage branch Surgery, must be energetic and have had some experience in general and panel practice. Able to drive motor or motor-cycle. Aet. 25 to 30. A partnership will be entertained if applicant proves suitable. — Address, No. 5666, B.M.A. House, Tavistock Square, W.C.1.

WANTED, OUTDOOR MALE ASSISTANT (Industrial Town, near Manchester), salary £250, in large mixed Practice, with increase to suitable man. House available. Previous experience essential. Partnership would be considered after reasonable period. Usual bond.—Address, No. 5575, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — OUTDOOR MALE ASSISTANT for Midland Country Practice, unmarried Glasgow Graduate preferred. Salary £300 p.a., with board, lodgings, and car expenses.—Address, No. 5767, B.M.A. House, Tavistock Square, W.C.1.

WANTED. — OUTDOOR MALE ASSISTANT. Pleasant East Coast Town. Experience G.P. Able to do operative surgery. Salary according to experience. Must be keen and energetic. Full particulars. Photo.—Address, No. 5679, B.M.A. House, Tavistock Sq., W.C.1.

WANTED.—OUTDOOR, MALE ASSISTANT, for panel and private Practice in West of England City. English or Scotch preferred. Commencing salary £360.—Address, No. 5612, B.M.A. House, Tavistock Square, W.C.1.

WANTED, WOMAN ASSISTANT, OUTDOOR, for busy working-class Practice in S.E. suburb of London. Would suit one recently qualified. — Address, No. 5673, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT FOR LARGE PRIVATE AND panel Practice. Salary £325, all found. Partnership to suitable man. References essential. Recent photo. Applications, stating age, height, nationality, etc. Own car.—Address, No. 5671, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT, OUTDOOR, MALE, AGED about 28, required for Country Town Practice (non colliery) in Midlands. Should have had surgical experience and held Hospital appointments. Salary £450 and car allowance.—Address, No. 5665, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANTSHIP WITH DEFINITE VIEW TO Partnership, required by M.B., B.Ch., nine years' experience general practice. Free October 1st. Capital. Car.—Address, No. 5659, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANTSHIP WANTED BY WOMAN Doctor, M.R.C.S., L.R.C.P. Two years' hospital and G.P. experience. Accustomed sole charge. Own car.—Address, No. 5772, B.M.A. House, Tavistock Square, W.C.1.

ASSISTANT WANTED, OUTDOORS, £350. Colliery and General Practice. State age, nationality, etc. — Address, No. 5762, B.M.A. House, W.C.1.

ASSISTANT, WITH OR WITHOUT VIEW, wanted in North Midlands. Englishman preferred. Well up in medicine and gynaecology. State age, experience, if married, education, religion, nationality, etc.—Address, No. 5655, B.M.A. House, Tavistock Square, W.C.1.

LONDON, S.E.—ASSISTANT WANTED SEPT. 29th. £250 a year and all found. Suit recently qualified man. Usual bond.—Address, No. 5662, B.M.A. House, Tavistock Sq., W.C.1.

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LOCUM.—A RETIRED EXPERIENCED G.P. would act as LOCUM or ASSIST. Congenial occupation more important than remuneration. — Address, No. 5752, B.M.A. House, Tavistock Square, W.C.1.

LOCUM TENENCY WANTED BY EXPERIenced Doctor who has recently sold his Practice. Country preferred. Free now. Graduate of Oxford University. Fishing acceptable. Car available if desired.—Address, No. 5684, B.M.A. House, Tavistock Square, W.C.1.

WOMAN LOCUM WANTED, 1 OR 2 WEEKS, part-time, Country, South. Own car preferred. Experience not essential. Send particulars. — Address, No. 5773, B.M.A. House, Tavistock Square, W.C.1.

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Applications are invited for the post of RESIDENT MEDICAL OFFICER (male or female). The appointment is for six months. Salary £150 per annum, with residence, board, and laundry.

Applications, with references to RICHARD H. PRESCOTT, Secretary-House Governor.

THE KING EDWARD VII WELSH NATIONAL MEMORIAL ASSOCIATION.

ASSISTANT TUBERCULOSIS OFFICERS.

Applications are invited for the posts of Half-time Assistant Tuberculosis Officers (two in number) to be attached to the Newport and Pontypridd areas respectively, and commencing duty on or about October 8th next. The appointments are limited to one year at a remuneration for the year of £250, subject to an emergency deduction of £3 5s. During their tenure successful candidates will be expected to take during the other half of their time the Course for the Diploma in Tuberculous Diseases (Wales) at the Tuberculosis Department, Welsh National School of Medicine, and afterwards sit the examination.

Applicants must have held a house appointment in medicine or surgery, for at least six months in a general hospital, and must also have held either a post as resident for a period of not less than six months in an institution for the treatment of tuberculosis (medical or surgical) or a period of whole-time work accepted by the Senate as equivalent thereto.

Applications, stating age, qualifications, and previous experience, together with copies of three recent testimonials, to be sent to the undersigned not later than October 1st.

Memorial Offices, Westgate Street, Cardiff. D. A. POWELL, Principal Medical Officer.

THE QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.2.

RESIDENT MEDICAL OFFICER required on November 1st. The appointment is made for six months and may be extended for further periods of six months, but cannot be held for more than two years.

The Resident Medical Staff consists of the Resident Medical Officer as above, Three Casualty Officers, Two House Physicians, and One House Surgeon.

Salary, inclusive of panel fees £200 p.a., with board, residence, and laundry. Candidates must have held a responsible resident appointment at a recognised hospital.

Forms of application may be obtained from the undersigned and must be completed and returned on or before October 8th.

CHARLES H. BESSELL, Secretary.

September 18th, 1934.

EAST LANCASHIRE TUBERCULOSIS COLONY, BARROWMORE HALL, GREAT BARROW, near CHESTER.

Under the direction of the British Red Cross Society and the Order of St. John of Jerusalem.

HOUSE PHYSICIAN (Male) required.

The appointment is for six months, and is renewable. Salary £100 per annum, with board, residence, and laundry.

The appointment is terminable by one month's notice.

The Institution deals with all stages of pulmonary tuberculosis, and comprises hospital accommodation, sanatorium accommodation, extensive workshops for graduated work, and a settlement.

Applications, marked "House Physician," with copies of three testimonials, to be sent to the Medical Superintendent at the above address.

ST. PAUL'S HOSPITAL FOR DISEASES (INCLUDING CANCER) OF THE GENITO-URINARY ORGANS AND SKIN, Endell Street, Holborn, W.C.2.

Applications are invited for the undermentioned position: HOUSE SURGEON (vacant October 19th). Candidates must be qualified and registered. Salary at the rate of £150 per annum, with board and residence. The appointment is for a period of six months, on the termination of which the holder is eligible for the position of Resident Medical Officer, in which capacity he will have charge of the Surgical beds. During his appointment as House Surgeon the duties will involve work in the Surgical Wards and in the Out-patient Department. Applications, with copies of recent testimonials, to be sent on or before October 1st, to the Chairman of the Medical Committee.

JEWISH MATERNITY HOSPITAL Underwood Street, E.1.

Applications are invited for the post of RESIDENT HOUSE SURGEON. Duties commence October 1st for a period of six months. Salary at the rate of £50 per annum.

Applications, together with copies of three recent testimonials, to be sent to the undersigned not later than September 25th.

ALICE MODEL, Secretary.

CITY OF BIRMINGHAM.

PUBLIC HEALTH DEPARTMENT.
TUBERCULOSIS SECTION.

RESIDENT ASSISTANT MEDICAL OFFICER.

Applications are invited from Resident single registered male Medical Practitioners for the post of Assistant Resident Medical Officer in the Tuberculosis Section of the Public Health Department. The successful candidate will be employed both in a Sanatorium and in a Dispensary.

Candidates should have held a resident General Hospital appointment, or an appointment in some Institution set apart for the treatment of those suffering from Tuberculosis. Experience in the diagnosis and treatment of the non-pulmonary forms of tuberculosis is essential.

The commencing salary will be at the rate of £550 per annum, i.e., £400 cash and emoluments valued at £150, rising to £450 cash plus emoluments.

The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

The appointment will be subject to the Birmingham Corporation Superannuation Scheme, to the candidate passing a medical examination, and to one month's notice on either side.

Forms of application and a summary of duties may be obtained from and should be returned with three recent testimonials to the Chief Clinical Tuberculosis Officer, 151, Gt. Charles Street, Birmingham, 3, not later than September 29th.

Council House, Birmingham, 1. F. H. C. WILTSHIRE, Town Clerk.

CITY OF BIRMINGHAM.

DUDLEY ROAD HOSPITAL. (926 Beds.)

Applications are invited from fully qualified Medical Practitioners for whole-time appointment as JUNIOR MEDICAL OFFICERS (Male) at the DUDLEY ROAD HOSPITAL, Birmingham. The appointment will be for a period of six months, but may be extended for a further period of not exceeding six months. Salary at the rate of £200 per annum and full residential emoluments. The officer appointed will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

Further particulars may be obtained from the Medical Superintendent at Dudley Road Hospital, to whom applications, stating age, experience, and qualifications, with copies of recent testimonials, should be forwarded not later than September 27th.

CITY OF PLYMOUTH.

CITY (GENERAL) HOSPITAL. (570 Beds.)

JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited from duly qualified Medical Practitioners for the post of Junior Assistant Medical Officer at the City (General) Hospital, Plymouth.

The salary will be at the rate of £250 per annum, less 2½ per cent. temporary deduction, with full residential emoluments.

The officer will be required to refund to the Council all fees, allowances, and emoluments, other than the foregoing, received by him.

The appointment will be for the period of 12 months, terminable by one month's notice on either side.

The work will be mainly of a surgical nature, and previous experience in a general hospital is desirable.

Further particulars may be obtained from the Medical Superintendent, City Hospital, Plymouth.

Applications, endorsed "Junior Assistant Medical Officer," together with copies of not more than three recent testimonials, should be sent to the undersigned not later than Wednesday, September 26th.

Town Hall, Stonehouse, Plymouth. September 3rd, 1934. T. PEIRSON, Medical Officer of Health.

WESTERN OPHTHALMIC HOSPITAL, Marylebone Road, N.W.1.

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT HOUSE-SURGEONS. The salaries are at the rate of £150 and £100 per annum respectively, and the appointments are for six months. Some previous ophthalmic experience is required. The selected candidates are required to take up their duties on November 1st.

Applications, accompanied by copies of three testimonials, should reach me by October 3rd. Candidates should state in their applications whether they are prepared to accept either post.

H. W. BURLEIGH, Hon. Secretary.

CITY OF BIRMINGHAM.

PUBLIC HEALTH DEPARTMENT.
TUBERCULOSIS SECTION.

SENIOR ASSISTANT MEDICAL OFFICER.

The Public Health Committee invite applications from registered male medical practitioners for the above post, the work to include duties both in the Tuberculosis Dispensary and in a Sanatorium with 325 beds.

Candidates should have had at least three years' experience in the practice of their profession, and should have held since qualifying a resident appointment in a general hospital for not less than six months, and have had special experience in Institutions recognised both for the diagnosis and treatment of tuberculosis.

The commencing salary will be at the rate of £750 per annum inclusive of any emoluments. There may be a house available for the officer, in which case the assessed annual value, rent and rates, will be deducted from the salary; if not, his place of residence must be near the sanatorium and be approved by the Committee. The appointment is subject to the Birmingham Corporation Superannuation Scheme; to the candidate appointed passing a medical examination; and to one month's notice on either side. He will be required to refund to the Council all fees, allowances, and emoluments (other than the foregoing) received by him.

Application forms, with a summary of duties, may be obtained from the Chief Clinical Tuberculosis Officer, 151, Great Charles Street, Birmingham, 3, and should be returned to him not later than September 29th.

Council House, Birmingham, 1. F. H. C. WILTSHIRE, Town Clerk.

COUNTY BOROUGH OF BOLTON.

PUBLIC ASSISTANCE COMMITTEE.

TOWNLEYS HOSPITAL.

Wanted for the Townleys Hospital, Farnworth, near Bolton, an ASSISTANT MEDICAL OFFICER (Male) for a period of one year.

The salary will be at the rate of £225 per annum, and rations, furnished apartments, attendance, washing, etc.

Forms of application, together with conditions of appointment (for which a stamped addressed foolscap envelope must be enclosed) may be obtained from me.

Last day for application October 4th.

28, Mawdsley St., Bolton. SAMUEL KINLAY, Public Assistance Officer.

September 14th, 1934.

CORPORATION OF GLASGOW.

PUBLIC HEALTH DEPARTMENT.

JUNIOR RESIDENT MEDICAL OFFICER (male) wanted for HAWKHEAD ASYLUM. Commencing salary £300 per annum, with board, lodging, and laundry. Previous asylum experience unnecessary, but preference will be given to one who has been engaged in pathological work or who has been House Physician. Ample opportunity afforded for research.

Applications, stating age and experience, and accompanied by copies of not more than three testimonials, to be sent by October 1st, to the Medical Superintendent, Hawkhead Asylum, Crookston, Glasgow, S.W.2.

IMMEDIATE VACANCY ON RESIDENT STAFF for Male Officer as PATHOLOGICAL ASSISTANT at ROYAL BERKSHIRE HOSPITAL, READING, to reside at and also have charge of 63 beds at Branch Hospital of Recovery.

Appointment for six or twelve months.

Candidates must be fully qualified and registered.

Remuneration at rate of £125 p.a., with board, residence, laundry.

Applications, stating age and experience, with copies of testimonials, to be sent at once to the undersigned.

F. A. LYON, Secretary.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, BRIGHTON. (100 Beds.)

HOUSE PHYSICIAN (Male). Salary at the rate of £100 per annum, with board, lodging, and laundry. No canvassing allowed. To commence duties on September 30th. Applications, in writing, accompanied by testimonials, should be sent to PERCY F. SPOONER, Secretary, Dyke Road, Brighton.

September 13th, 1934.

THE INFANTS HOSPITAL, Vincent Square, Westminster.

Applications are invited from qualified Medical Practitioners for the post of CLINICAL ASSISTANT (honorary) in the Out-patient Department. Applications, stating previous experience should be addressed to the Secretary.

HERTFORDSHIRE COUNTY COUNCIL.

MATERNITY AND CHILD WELFARE.

Applications are invited for the post of a female Medical Officer for Maternity and Child Welfare work in the County of Hertford. Applicants, whose age must not exceed 45 years, should be registered Medical Practitioners, and have had special experience in Maternity and Child Welfare and Ante-Natal work, and have had at least three years' experience in the practice of their profession. Commencing salary not exceeding £550 per annum in accordance with scale and previous experience in maternity and child welfare work, rising by annual increments of £25 to a maximum of £700 per annum.

The appointment will be subject to the provisions of "The Local Government and Other Officers Superannuation Act, 1922," and also to a medical examination as to fitness.

The selected candidate will be required to reside in the County of Hertford.

Applications, giving particulars of experience, qualifications, and copies of three recent testimonials, should be sent to the Clerk of the County Council, Clerk of the Peace Office, Hertford, not later than Tuesday, September 25th.

Clerk of the Peace Office, Hertford. Sept., 1934. E. LONGMORE, Clerk of the County Council.

CHESTER ROYAL INFIRMARY. (211 Beds.)

Applications are invited for the appointment of HONORARY ASSISTANT OPHTHALMIC SURGEON to fill the vacancy caused by the resignation of Mr. A. Wynn Green.

Candidates must hold the Degree of Master of Surgery of a University in the United Kingdom or the Irish Free State, or a Fellowship of a Royal College of Surgeons, or one of the recognised Diplomas of Ophthalmology.

The Surgeon appointed will be required to limit his practice to his special subject. He will be required to attend Out-patients, and will be allotted beds.

Applications, accompanied by not more than three recent testimonials, with 60 copies thereof, should be delivered addressed to the Chairman, Board of Management, Royal Infirmary, Chester, on or before Tuesday, October 9th.

Canvassing is prohibited.

By Order of the Board of Management,
Chester. J. ROWSE MITCHELL, Secretary.
Sept. 17th, 1934.

WORCESTER ROYAL INFIRMARY.

Applications are invited for the post of HONORARY PHYSICIAN.

Applicants must possess one of the following qualifications:

(a) A Degree in Medicine at one of the Universities of the United Kingdom, or of some Foreign or Colonial University, recognised by the General Medical Council; or

(b) The Fellowship or Membership of one of the Royal Colleges of Physicians in the United Kingdom.

All candidates must be registered under the Medical Act.

The election of Honorary Physician shall be for a term of seven years, at the expiration of which term he shall be eligible for re-election.

Forty-five copies of the application, with testimonials, should be forwarded to the Chairman, Worcester Royal Infirmary, before Saturday, October 6th.

HOSPITAL OF ST. CROSS, RUGBY.

Applications are invited for the post of MALE RESIDENT MEDICAL OFFICER, qualified. (Three R.M.O.s.)

Salary to commence at the rate of £100 per annum for the first three months, £125 per annum for second three months, and at the rate of £150 per annum for subsequent months. Full board, washing, etc., provided.

Six months' appointment, and eligible on completion of service for further extension of six months.

The candidate must be prepared to commence duties immediately.

The practice of the Hospital offers excellent opportunities for wide experience.

Certificates and other fees shared by R.M.O.s.

Applications, stating age, nationality, and full details, with copies of three recent testimonials, to be sent to the undersigned.

(Signed) W. COCKBURN,
Superintendent & Secretary.

THE GENERAL HOSPITAL, BIRMINGHAM.

HOUSE SURGEON from October 15th for nine months, the first three months to be spent in the Casualty Department; salary £70.

ANÆSTHETIST from October 1st for three months in the first instance. Salary £100 if previous appointment has been held.

A. H. LEANEY, House Governor.
September, 1934.

DOWN MENTAL HOSPITAL, DOWNPATRICK, NORTHERN IRELAND.

VACANCY FOR ASSISTANT MEDICAL OFFICER.

The Committee of Management of above Hospital, at its Meeting on October 20th, will consider applications for vacant post of Junior Assistant Medical Officer. Salary £300 per annum, rising by annual increments of £25 to £400 per annum, and with allowances of furnished apartments, rations, laundry, fuel, light, and attendance, valued for pensionable purposes at £130 per annum. A deduction of 3 per cent. will be made from the salary and value of allowances under the Asylums Officers Superannuation Act, 1909.

Candidates must be unmarried, and not more than 32 years old, except that a deduction may be made for time served in the Army or Navy during the Great War.

Form of application, giving further particulars, may be obtained from the Resident Medical Superintendent until October 11th.

DOWN MENTAL HOSPITAL, DOWNPATRICK, NORTHERN IRELAND.

VACANCY FOR CLINICAL ASSISTANT.

Appointment for one year only; renewable for second year. Honorarium £60 per annum, with apartments, rations, and laundry.

Candidates must be under 30 years of age, and registered.

Opportunities for study and research.

Immediate applications, with copies of references, to the Resident Medical Superintendent.

CHELTENHAM GENERAL AND EYE HOSPITALS.

HOUSE SURGEON WANTED—Male or Female.

The Board of Management invite applications for the post of House Surgeon, whose chief duties will be in the Eye, Ear, and Throat Department.

Candidates must be fully qualified. Salary £300 p.a., non-resident.

Applications, with copies of testimonials, to be sent in a sealed envelope, marked "House Surgeon," to the undersigned not later than September 29th.

J. CUMMING SMITH, F.C.I.S.,
General Hospital, Secretary.
Cheltenham. September 15th, 1934.

RADCLIFFE INFIRMARY AND COUNTY HOSPITAL, OXFORD.

Applications are invited from qualified women for the post of RESIDENT MEDICAL OFFICER at the Osler Pavilion, (Tuberculosis Sanatorium) Headington, Oxford, as from October 11th, next.

Appointment will be for six months in the first instance. Salary at the rate of £120 per annum.

Candidates must have a practical knowledge of *x*-ray work, artificial pneumothorax, and modern methods of treatment.

Applications, with copies of testimonials, must be forwarded to the undersigned, at the Radcliffe Infirmary, not later than October 1st.

A. G. E. SANCTUARY,
September 14th, 1934. Administrator.

STAFFORDSHIRE GENERAL INFIRMARY, STAFFORD.

HOUSE PHYSICIAN required. Salary £150 per annum, with board-residence. The appointment must be held for at least six months, and the duties include those of Casualty Officer.

The Hospital has 100 beds and there are two Residents.

Applications, stating age, accompanied by copies of three recent testimonials, should be sent at once to the undersigned.

Stafford. A. E. COLLINS,
Sept. 21st, 1934. Secretary.

HERTFORD COUNTY HOSPITAL.

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN to the above Hospital.

Candidates should possess a degree in medicine of a British University and the Membership or Fellowship of the Royal College of Physicians.

Applications (16 copies), together with copies of testimonials, should be made by Monday, October 8th, to the undersigned.

PERCY G. BROOKS, Secretary.

LONDON COUNTY COUNCIL.

Applications invited for appointment as RESIDENT MEDICAL SUPERINTENDENT, St. GEORGE-IN-THE-EAST HOSPITAL, Raine St., Wapping, E.1. (410 beds.) Person appointed will be under direction of Medical Officer of Health, and must assist at other establishments of the Council if so required. Salary £950—£50—£1,200 a year, with the emolument of unfurnished house or quarters, including payment by the Council of local and water rates, valued for Superannuation purposes at £100 a year, subject to review. Candidates other than members of the Council's medical staff must be not over 55 years of age; must be duly qualified medical practitioners for at least five years, have been house physician or house surgeon in a public general hospital, and have had experience in hospital administration. Surgical experience essential. Application forms obtainable (stamped addressed foolscap envelope necessary) from Clerk of the Council, County Hall, S.E.1, returnable by October 8th.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone Road, N.W.1.

RESIDENT ANAESTHETIST required to commence duty as soon as possible. Applicants must be registered. Appointment for two months. Salary at the rate of £100 per annum, with board, residence, and washing allowance (4s. weekly).

Applications with copies (not originals) of not more than three testimonials, should be sent to the Secretary as soon as possible.

H. B. STOKES, Secretary-Supt.

ROYAL SEA BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS, MARGATE. (320 Beds.)

Applications are invited for the post of VISITING SURGEON for Ear, Nose, and Throat cases at this Hospital. An honorarium of Twenty-five guineas per annum, plus first-class railway fares is offered. The appointment is subject to the Laws and Rules of the Hospital. Applications, accompanied by one testimonial, should reach the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, W.C.2, on or before September 27th.

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WANTED BY EDIN. GRADUATE, PRACTICE, with panel, within 10 miles of London, preferably S.W. £1,000 to £1,500 p.a. Capital to £5,000.—No. 4392.

WANTED BY CAMBRIDGE GRADUATE, AET. 29, PARTNERSHIP if possible, Practice considered. £1,200 up. Country or small Town, with Cottage Hospital. House not too large, rent preferred. Applicant has capital to nearly £5,000.—No. 4391.

WANTED.—PRACTICE OR GOOD PARTNERSHIP. Provincial Town in South Midlands or London Suburb. About £2,500. Applicant is 42, married, and has £4,000 cash ready.—No. 4383.

FOR DISPOSAL.

LONDON SUBURB.—PARTNERSHIP.—GOOD middle-class Practice. £1,500, increasing rapidly and offering great scope. Panel 4.0. House to rent. 1/6 or 1/2 share at 2 years' purchase.—No. 9364.

LONDON, W.2.—ABOUT £900 P.A.; INCL. appointments worth £130. No dispensing. Panel just started, ample scope. Fees 5/- to 21/-. Suitable accommodation on inclusive rent. Premium £1,400 or offer.—No. 9362.

LANCS.—ABOUT £1,000 P.A., WITH PANEL about 1,000. Visits 4/- up. Mid. £2 2s. up. Well-situated house, 2 recep., 4 bed., surgery, etc., garage, and garden. Rent £75 p.a. Premium 1½ years' purchase or near.—No. 9350.

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DURHAM.—IN FLOURISHING NEIGHBOURHOOD.—Old-established industrial, and panel of about 930. Average £1,200. Prem. 1¾ yrs.' purchase. Freehold house £850.—No. 9347.

SURREY. — NUCLEUS, LAST YEAR'S RECEIPTS £426. Panel 170, rising neighbourhood. Ample scope. Premium £400.—No. 9352.

LONDON SUBURB, S.W.—ABOUT £400 P.A., increasing. Estab. but 3½ years. Panel not encouraging, but ample scope. Visits 5/- to 21/-. Prem. £200. House, 2 recep., 5 bed., to rent.—No. 9349.

WEST OF ENGLAND.—CATHEDRAL CITY. Nearly £1,100 p.a. and ample scope. Panel refused but scope. Clubs about £250 p.a. Premium £2,000. Good family house and large garden.—No. 9327.

WALES TOWN. — OVER £1,100 P.A. No panel. Several appointments. Fees 5/- to 21/-. Prem. 2 yrs.' purchase. Good freehold house in own grounds with cottage.—No. 9348.

SOUTH WALES.—TOWN PRACTICE. MINING and agricultural. Average £1,840 p.a. Panel 1,350. Several appointments. 13-roomed house, 4 bedrooms, etc. Separate garage and garden.—No. 9339.

S.W. COUNTY. — COAST TOWN.—WOMAN'S PRACTICE, averaging £350, with scope for increase. Very little midwifery. Small panel. House for sale at £500, but others available.—No. 9337.

LONDON, S.E.—AVERAGE £560. PANEL, only recently started, about 200. Fees 2/6 to 3/6. Premium £900. 8-roomed house to rent on lease.—No. 9335.

DOMINIONS PRACTICE.—AVERAGE ABOUT £4,000 p.a. Well-estab. Requires man and woman in Partnership, one of whom must be Surgeon. Excellent scope. Opposition not severe.—No. 9323.

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4 MIDLANDS.—WELL-ESTABLISHED PRACTICE IN MANUFACturing District close to several good towns. Held by medical woman, but would suit medical man. Cash receipts average £1,150 p.a., including club and panel over 1,000. Double fronted house (3 bedrooms) with large garden and two garages for sale. Plenty of scope for increase. Ill-health cause of sale. Premium 2 years' purchase.

5 S. COAST.—SMALL PRACTICE IN RAPIDLY GROWING SEASIDE Town. Receipts 18 months to April 30th last, £355. Panel just over 100. House (4 bedrooms) standing in grounds about half an acre, for sale. Scope for increase as building is proceeding rapidly. Premium 1½ years' purchase.

6 LONDON, E.—WELL-ESTABLISHED PRACTICE CARRIED ON BY Medical Woman in W. Ham area. Receipts past two years £583 and £563 p.a. respectively. Panel 80. Visiting fees mostly 3/6. Small house to rent. Scope for increase. Premium £850.

7 LONDON, W.—LOCK-UP BRANCH SURGERY IN WESTERN Suburb with Panel about 400 and approximately £160 p.a. from private work. No midwifery. Rent £5 8s. monthly. Premium £500, to include furniture, etc.

8 OPHTHALMIC PRACTICE.—WELL-ESTABLISHED IN INDUStrial Town (with beautiful surrounding country) averaging £1,460 p.a. Hospital Appointments, good prospects. House with garden and garage. Price of freehold £1,350. Premium 1 years' purchase.

9 LONDON, S.W.—WELL-ESTABLISHED AND VERY COMPACT PRACTICE averaging about £1,050 p.a. in pleasant Suburb. Panel about 1,200. House (3 bedrooms) with garage and garden There is also another house, both for sale or rent. Considerable scope for increase. Premium £2,000.

10 LONDON, S.E.—OLD-ESTABLISHED CASH AND PANEL PRACTICE doing about £1,050 p.a. close to Charing Cross. Panel 1,260. Corner house in good position to rent. Scope for increase. Premium £1,600.

11 W. OF ENGLAND.—PARTNERSHIP (AFTER PRELIMINARY Assistantship) in old-established Practice in important City. Cash receipts average about £2,800 p.a. Panel 2,700. One-third share would be sold to a suitable man at two years' purchase.

12 N. DEVON.—SMALL PRACTICE DOING ABOUT £400 P.A. IN delightful Country District on Coast. Nice house (5 bedrooms) standing in about acre of ground with garage. Locality rapidly growing and offering great scope. Premium for house and Practice £1,750.

13 NEW ZEALAND.—WELL-ESTABLISHED PRACTICE IN SMALL Seaside Town in South Island. Vendor's Bookings for just under seven months, £700. Small Hospital. House contains 9 rooms, waiting room, etc. Large garden, stable, etc. To rent. Premium £1,400.

14 LONDON, S.W.—LOCK-UP PRACTICE IN DENSELY POPUlated suburban district doing about £500 p.a. Panel 525. Premises consist of consulting and waiting rooms. Rent £70 p.a. inclusive. Ample scope for increase. Premium £900.

15 KENT.—WELL-ESTABLISHED PRACTICE ABOUT £1,100 P.A. in rapidly growing district about 12 miles from London. Panel over 1,300. Convenient house (4 bedrooms, etc), nice garden and very large garage for sale or rent. Excellent scope as large amount of building going on all round. Premium £2,500.

16 S. COAST.—OLD-ESTABLISHED MIDDLE AND BETTER-CLASS non-dispensing PRACTICE in Residential Town and Seaside Resort. Cash receipts average £3,255 p.a. No panel. Visiting fees 5/- to £1 1s. and £1 11s. 6d. Exceptionally fine house in one of the best parts; containing 7 bed and dressing rooms, etc. Garage and nice garden. Freehold would be sold or rented on lease. Good educational facilities. Premium two years' purchase.

17 S. COAST.—PARTNERSHIP IN OLD-ESTABLISHED PRACTICE about £2,500 p.a. in popular Seaside Resort. Panel 1,400. Visits 2/5 to 10/6. Good house (6 bed and dressing rooms) overlooking sea to rent on lease. Good educational facilities. Excellent golf and other sport. Premium three-eighths share two years' purchase.

18 S.W. OF ENGLAND.—GOOD MIDDLE-CLASS NON-DISPENSING PRACTICE in Seaside Resort. Cash receipts average nearly £750 p.a. No panel, but scope in this direction. Visits 3/6 to 14/6. Nice house (7 bed and dressing rooms) with electric light and hot water system for sale. Sport of all kinds. Plenty of good society and educational facilities. Hospital. Premium one and a half years' purchase.

19 HOME COUNTY.—PARTNERSHIP IN GOOD MIXED-CLASS Practice in Town about 35 miles from London. Cash receipts about £3,000 p.a., including about £1,000 from panel. Visits 3/6 to 10/6. Suitable house for sale or rent. Scope for increase. Premium one-third share £2,300.

British Medical Bureau

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(FOUNDED 1880.)

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Practices and Partnerships for Disposal (continued).

20 CAPE PROVINCE.—WELL-ESTABLISHED PRACTICE IN small Town in one of the foremost Farming Districts (altitude over 5,300 ft.). Cash receipts year ending June 30, 1934, £1,100. including appointment worth £200. Visiting fees 7/6 in town by day, £1 1s. by night. Country at the rate of 4/- by day, 6/- by night. House contains spacious lounge, 2 bedrooms, bathroom, surgery, etc. Garden and good garage. Price about £1,475. Reasonable premium.

21 SOUTH COAST SEASIDE RESORT.—PARTNERSHIP (AFTER Preliminary Assistantship) in well-established Practice of about £2,800 p.a. in Residential Town. Panel 1,755. Visiting fees 4/6 to 15/-. Suitable accommodation could be obtained. One-third share (after Preliminary Assistantship) at two years' purchase. Cottage Hospital, and scope for Surgery, if desired.

22 SOUTH COAST.—PARTNERSHIP IN WELL-ESTABLISHED Practice of £2,600 p.a. in favourite Seaside Resort. Panel £444. Detached house (5 bedrooms) to rent on lease. Premium two-fifths share £2,350

23 DEATH VACANCY.—OPHTHALMIC PRACTICE OF ABOUT £3,000 p.a. in an important Town in the South of England. Consultations £3 3s. Operations 15 to 100 gns. Premium for one-half share 2 years' purchase.

24 LONDON, N.W.—OLD-ESTABLISHED PRACTICE AVERAGING £800 p.a. in pleasant Suburb. Panel about 850. Semi-detached house (6 bedrooms) with good garden for sale. Scope for increase. Premium £1,500.

25 BRIXTON, S.W.—NUCLEUS OF PRACTICE. CASH RECEIPTS past eleven months about £400. Panel 60. Fees in surgery 2/6 to 7/6. Rent of well-furnished surgery £1 weekly. Premium £260 for quick sale.

26 LONDON, E.5.—WELL-ESTABLISHED PRACTICE £380 P.A. Panel 130. Visits 3/6, 5/- (night 10/6). Shop-fronted surgery and flat to let. Premium £350.

27 LONDON, N.W.—OLD-ESTABLISHED PRACTICE IN GOOD residential neighbourhood. Receipts average £1,460 p.a. Panel 1,500. Visits from 3/6 to 5/-. Excellent detached corner residence (7 bed and dressing rooms), with garage and garden for sale. Scope. Premium £3,000.

28 S. OF ENGLAND.—PARTNERSHIP (AFTER PRELIMINARY Assistantship) in old-established Practice in growing district on outskirts of a delightfully situated Country Town. Suitable accommodation can be rented. Applicant should be aged 28-35 with some experience. After preliminary Assistantship a share worth £700 would be sold at two years' purchase. Good hospital and educational facilities.

29 BIRMINGHAM.—OLD-ESTABLISHED PRACTICE AVERAGING £650 p.a. in suburban district. Panel about 800. Visits 2/6 to 7/6, medicine not included. Substantially built house (7 bed and dressing rooms) occupying prominent corner position with garage and small garden for sale. Considerable scope as district is growing. Premium £1,300.

30 LONDON, W.—PARTNERSHIP IN WELL-ESTABLISHED PRACtice between £1,100—£1,200 p.a. in residential area easy reach of West End. Incoming Partner should be aged 30-33. Great scope for panel work. One-half share (£500 p.a. guaranteed) would be sold for £1,000.

31 SURREY.—INCREASING PRACTICE IN DEVELOPING RESIdential District. Income about £530 p.a., including small panel returning £80 p.a. Visits 5/- to 7/6. Very good freehold residence for sale. Great scope for increase. Premium £500.

32 SURREY.—PARTNERSHIP IN SOUND OLD-ESTABLISHED good mixed-class Practice of £2,600 p.a. within 10 miles of London. Several appointments and Panel 325. Visits 5/- upwards. Few 3/6. Very little midwifery. Good corner house (5 bedrooms) with nice garden for sale. Scope for considerable increase. Premium one-half share 2 years' purchase.

33 LONDON, S.E.—WELL-ESTABLISHED PRACTICE OF £1,037 p.a. in growing residential suburban district. Panel over 560. Visits 4/-, 7/6, and upwards. Excellent detached house (4 bedrooms) with garage and half acre of garden to rent. Scope for increase. Premium 2 years' purchase.

35 S.W. OF ENGLAND.—PRACTICE CARRIED ON BY MEDICAL woman in coast town. Receipts average about £350 p.a. including appointments and small panel. Visiting fees 5/- to 7/-. Suitable house available. Premium £350.

36 COUNTY TOWN ABOUT 130 MILES FROM LONDON.—VERY old-established middle and upper-class PRACTICE averaging nearly £1,200 p.a. Panel 120. Visiting fees 7/6 to 15/6. Ten-roomed house in good residential part with garage and garden for sale. Scope. Premium £1,750.

37 S.W. OF ENGLAND.—NON-DISPENSING PRACTICE OF £1,965 p.a. in beautifully situated and growing Summer Resort. No panel or appointments. Visits and consultations 7/6, 10/6, and £1 1s. Practically no night work. Modern house (6 bedrooms) pleasantly situated in quiet locality, with one acre garden, for sale. Premium 1¾ years' purchase.

38 BIRMINGHAM.—MIXED PRACTICE OF £3,350 P.A. IN rapidly growing suburb. Panel about 1,800. Very nice detached modern residence (5 bedrooms) with garage and small well-kept garden. Excellent scope for increase. Premium 1¾ yrs.' purchase.

39 MEDITERRANEAN TOWN.—OLD-ESTABLISHED GOOD-CLASS non-dispensing PRACTICE averaging over £2,000 p.a. Fees chiefly £1 1s. Charmingly situated Flat for sale. Premium—Practice—one year's purchase.

40 LONDON, S.E.—PRACTICE ABOUT £350 P.A. WITHIN 5 miles of Charing Cross. Panel 320. House contains waiting room, surgery, dispensary, 2 bedrooms, etc., rent £63 p.a. Premium £500, or offer.

41 LONDON, E.—SMALL PRACTICE IN POPULOUS AREA. CASH receipts past year £425. Panel 351. Accommodation comprises 4 rooms, kitchen, bathroom, and is rented on lease. Premium 1½ years' purchase.

42 BOURNEMOUTH.—DETACHED CORNER RESIDENCE BUILT by Medical Man and from which general practice has been carried on. The accommodation comprises 2 reception rooms, waiting and consulting rooms, 4 bedrooms, etc. Garage and garden. The freehold would be sold for £1,750. Active building is going on in the district, and there is a good opening.

43 SURREY AND HAMPSHIRE BORDER.—OLD-ESTABLISHED PRACTICE over £1,200 p.a. in Residential District. Panel 750. Visits 3/6 to £1/-. Good house (about 5 bedrooms), with electric light, gas, and company's water. Garage and very good garden for sale. Excellent golf. Good society. Premium one and a half years' purchase.

44 CORNISH COAST.—SMALL PRACTICE IN DELIGHTFUL SEAside town worth about £250. No dispensing or panel. House, 3 bedrooms, electric light, gas, and walled-in garden to rent. Premium £250.

45 ESSEX.—NUCLEUS OF PRACTICE WORTH ABOUT £175 p.a., capable of good increase, in populous district. Panel 257. House (4 bedrooms) in main thoroughfare, with garden, for sale or rent. District rapidly growing. Premium £200, to include drugs and part of Surgery furniture.

46 NORTHAMPTONSHIRE.—PARTNERSHIP IN OLD-ESTABlished and increasing Practice averaging £1,718 p.a., in small town. Panel 1,950. Good scope for young energetic man. Premium for one-half share two years' purchase.

47 HOME COUNTY.—PARTNERSHIP IN SOUND OLD-ESTABlished, about £6,500 p.a. in beautifully situated first-rate Country Town. House available which might be obtained on lease. Considerable scope for increase. Incoming Partner should be aged about 30, preferably married, and a physician with some knowledge of Pathology. Commencing share of (approximately) £1,170 p.a. would be sold at two years' purchase.

48 HERTS.—SMALL PRACTICE IN GROWING COUNTRY District. Income little over £200 p.a. with small panel. Nice freehold corner house (4 bedrooms), garden back and front, for sale. Very good prospects for energetic man. Premium £350.

49 W. OF ENGLAND.—OLD-ESTABLISHED PRACTICE IN County Town. Receipts average over £1,050 p.a., including appointment and clubs worth about £250 p.a. No panel, but Practice might be considerably increased in this direction. Visiting fees 5/- to 10/6 and £1 1s. Pleasantly situated corner residence (8 bedrooms) with garage and fair-sized garden for sale. Very good educational facilities. Building progressing. Premium two years' purchase.

50 INLAND WATERING PLACE AND HEALTH RESORT.—WELLestablished non-dispensing PRACTICE. Receipts last three years averaged about £835 p.a., including a select panel of 280. Fees 5/- to £1 1s. Particularly attractive house with large garden, for sale. Scope. Premium £750.

51 N.W. COAST.—OLD-ESTABLISHED PRACTICE IN RESIdential Town. Cash receipts average about £655 p.a., including good appointments worth about £250. Well-situated house for sale. Good educational facilities for both boys and girls. Premium £850.

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CONSULTING OPHTHALMIC PRACTICE in large City near North Wales Coast. Cash Receipts last year £630. Appointment £50 p.a. Premium £500.—No. 607.

DERBYSHIRE.—Excellent PRACTICE in attractive Country and Market Town; in present hands 42 years. Average cash receipts £2,499 p.a., including appointments approx. £400 p.a. Panel 1,252. Good house, 3 reception, 8 bedrooms; garage, large garden and tennis court. Cottage Hospital. Premium—Practice —two years' purchase.—No. 605.

LANCS TOWN. — PARTNERSHIP in sound mixed-class Practice. Cash receipts last year £3,680. Panel over 3,000. Good detached house, 2 reception, 4 bedrooms, garage, and garden. Rent £58 p.a. Premium—half share —best offer.—No. 603.

NEWCASTLE-ON-TYNE. — PARTNERSHIP in old-established panel and private Practice. Cash receipts over £2,000 p.a. Panel over 2,000. Scope for increase. Incoming Partner may choose own residence. Premium —half share—2 years' purchase.—No. 602.

LANCS TOWN, nr. Manchester.—Excellent mixed-class PRACTICE. Cash receipts last year approx. £1,840. Panel 1,600. Scope. Good house, 2 reception, 4 bedrooms; garage and small garden. Premium 1½ years' purchase.—No. 574.

CHESHIRE (WIRRAL).—NUCLEUS offering great scope, as district is developing. Nice modern house, 2 reception, 4 bedrooms, garage, and good garden, to rent or would sell.—No. 515.

NORTH WALES.—Outdoor ASSISTANT wanted with view to Partnership in large Practice in pleasant Country Town. Applicants must be well-qualified and experienced. Knowledge of Welsh language essential. Local Hospital. Salary £500 p.a.—No. A.30.

NORTH-EAST COAST.—Very old-established middle and working-class PRACTICE. Cash receipts last year £1,388. Panel nearly 1,500. Scope. Good corner house, 2 reception, 5 bedrooms; gar. and small garden. Rent £60 p.a. Prem., best offer.—No. 595.

YORKSHIRE (North Riding).—PARTNERSHIP in estab. mixed-class Practice. Cash receipts last year over £2,000 p.a., including income from panel and appointments over £1,700. Scope for increase. Good roomy house available. Local Hospital. Premium —half share—1½ years' purchase.—No. 601.

NR. MANCHESTER. — Middle-class PRACTICE in residential district. Cash receipts over £1;200 p.a. Small select panel. Good house, 3 reception, 6 bedrooms; garage and garden, to rent on lease. Premium 1½ years' purchase.—No. 526

NORTH-WEST COAST.—RADIOLOGICAL PRACTICE. Cash receipts last year £809, including approx. £350 from appointments. Purchaser can choose own residence. Premium £1,275; part by instalments.—No. 588.

CO. DURHAM.—Old-established unopposed country PRACTICE. Cash receipts last year £877. Panel 573. Good house, (with modern conveniences); 2 reception, 4 bedrooms; garage and large garden. Net rent £20 p.a. Vendor retiring. Prem. 1½ yrs.' pur.—No. 593.

NORTHERN CITY.—Venereal Diseases PRACTICE. Cash. receipts last year £1,747. Fees 10/6 to £3 3s. House to rent at £65 p.a. Premium 1½ years' purchase.—No. 594.

MANCHESTER.—Old-established working-class PRACTICE. Cash receipts approx. £800 p.a. Panel and appointments £500 p.a. Scope. Good house, 2 reception, 3 bedrooms; garage. Rent £50 p.a. on lease. Good introduction. Vendor retiring. Premium, best offer.—No. 546.

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CUMBERLAND.—Old-established unopposed mixed PRACTICE in country district. Cash receipts over £400 p.a. Panel 300. Great scope for energetic man. Good house, 2 reception, 5 bedrooms; garage and garden. Rent £30 p.a. Vendor retiring: Premium, best offer.—No. 592.

LIVERPOOL.—Old-established PRACTICE. Cash. receipts £500 p.a. Panel 400. Scope. Good house, 2 reception, 5 bedrooms. Small garden. Rent £60 p.a. Premium £650.—No. 599.

MEDICAL WOMAN'S PRACTICE in Large Seaport Town on the East Coast. Cash receipts last year £500. Panel 100. Scope. Good house, 2 reception, 3 bedrooms, professional rooms, and small garden. Premium—Practice—£600.—No. 563.

LEICESTERSHIRE.—Old-established unopposed mixed PRACTICE in pretty country district. Cash receipts last year £828. Panel 800. Scope. Good house available. All kinds of sport. Premium 1½ years' purchase.—No. 596.

MANCHESTER.—Old-established mixed-class PRACTICE, averaging over £837 p.a. Panel over 1,000. Scope. Good house, 4 bedrooms; garage and small garden, for sale or may be rented. Premium 1½ years' purchase.—No. 589.

CHESHIRE.—Middle and better working-class PRACTICE in residential district near Manchester. Average cash receipts £1,105 p.a. Panel 1,140. Good detached house, 2 reception, 7 bedrooms; garage and garden. Local Hospital. Premium—Practice—2 years' purchase,—or near offer.—No. 555.

WANTED.—ASSISTANTS (with and without view to Partnership) and LOCUMTENENTS (male and female) FOR ENGAGEMENTS. Particulars on application.

All communications to be addressed to the Branch Manager, BRITISH MEDICAL BUREAU, 33, CROSS ST., MANCHESTER, 2.

Printed and published by the British Medical Association, at their Office, Tavistock Square, in the Parish of St. Pancras, in the County of London.

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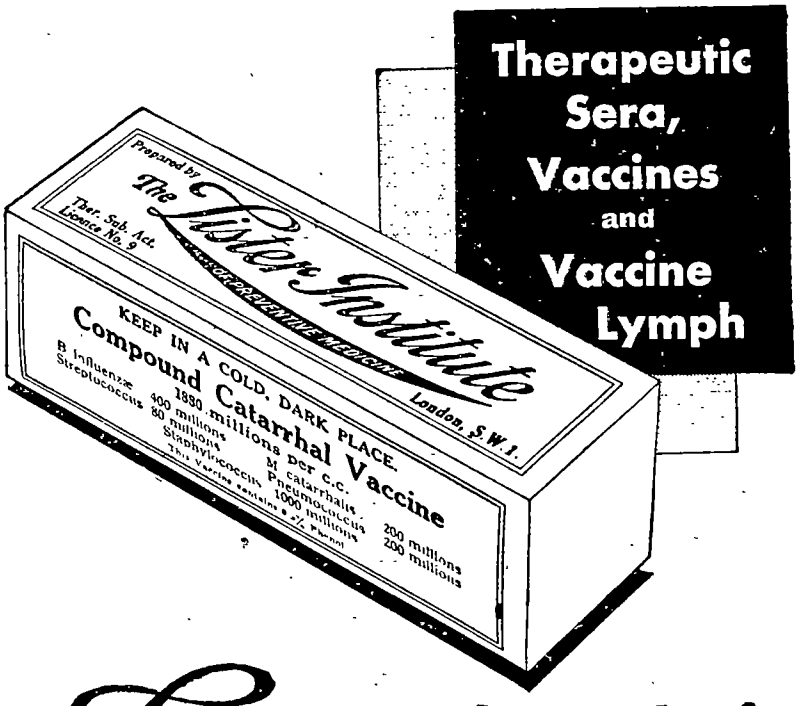
1. HOSPITAL TOWN WITHIN 165 MILES NORTH OF LONDON.—Well-established working and middle-class PRACTICE. Gross cash receipts for past 12 months £1,750. Panel of over 1,000. Appointments worth £150 p.a. House and surgery to be bought at £2,000, on which substantial amount can be obtained on mortgage. Premium £2,625.
2. LONDON, N.W.—DEATH VACANCY.—Average gross cash receipts for past 3 years stated to be £819. Panel of 600 approximately. Premium £1,000 or near offer.
3. LOCK-UP CITY PRACTICE.—Established 40 years and produces about £600 p.a., part of which is derived from special works. Premises on rental at £120 p.a. Premium £600 (£300 down with partnership for 6 to 12 months, and balance at end of agreed period).
4. LANCS.—LARGE TOWN.—RESIDENTIAL SUBURB.—Old-established good middle and better working-class PRACTICE held by Vendor for nearly ten years. Average gross cash receipts for last three years £1,320 (last year £1,577). Panel of about 850. Transferable appointments worth £160. Fees 3/6 to 7/6. Very attractive house, with all modern conveniences containing 2 reception, 4 bedrooms, etc. Good professional accommodation. Garage and nice garden. Price for freehold £1,600, part on mortgage. Good golf within easy reach. Excellent schools. Premium 1½ years' purchase.
5. LONDON, S.W.—LOCK-UP SURGERY.—Well-established PRACTICE producing about £500 p.a., including panel of 531. Very good scope for increase. Rent of surgery premises £70 p.a. Prem. £900.
6. OUTLYING EASTERN SUBURB.—PARTNERSHIP.—A one-quarter share is offered in a good-class old-established PRACTICE producing for last 12 months over £3,200, of which £1,830 is from panel. Appointments worth nearly £200 p.a. Suitable house, with 2 reception, 2 bedrooms, etc., at moderate rental. Premium 2 years' pur.
7. ESSEX.—Recently established PRACTICE situated in rapidly developing district and producing about £250 p.a., including panel of 300, and appointment worth about £12 p.a. Fees 2/- to 5/-. Suitable house, with 3 bedrooms. Can be rented at £4 10s. per month. Premium £300.
8. LONDON, S.E. — Recently established middle and working-class PRACTICE, producing for last 12 months £450 p.a. Panel of 226. Appointment worth £30 p.a. Fees from 2/6. Suitable house which can be rented at £70 p.a., part sublet. Premium £650.
9. EASTERN COUNTIES.—COAST TOWN.—Good-class, non-dispensing, non-panel PRACTICE, held by Vendor (who is retiring) for the past 14 years, situated in very attractive residential town with Cottage Hospital. Average gross cash receipts for last 3 years £1,129. Fees 3/6 to 21/-. No midwifery. Suitable house, with 2 reception, 6 bedrooms, etc., consulting room. Electric light. Garage. Small garden. Can be rented on lease at £80 p.a. Excellent sport and good schools. Premium £1,500.
10. LANCS.—LARGE TOWN.—Old-established good middle and working-class PRACTICE offering large scope for increase. Gross cash receipts for past 12 months £1,040. Panel of 240. Fees from 4/-. Suitable house, with 3 reception, 6 bedrooms, etc., good professional accommodation. Garage. Garden. Rent on lease £100 p.a. Premium £1,800, or near offer.
11. MIDDLESEX.—OUTLYING SUBURB.—Recently established PRACTICE producing for last 12 months £600 and offering unlimited scope for increase. Panel of 250. Suitable house, with 6 bedrooms, etc. Price for freehold £1,800, £1,460 on mortgage. Premium £900.
12. HOME COUNTIES.—PARTNERSHIP.—A one-half share is offered in a very old-established good mixed-class Practice, producing for the last 12 months approximately £4,000. Panel of 1,950. Appointments worth over £200 p.a. Visits 3/6 to 1½ gns. Very nice house, containing 3 reception, 7 bedrooms, etc., consulting room, surgery, and dispensary. Separate entrance. Large garden, with tennis lawn. Electric light. Garage. Can be rented on lease. Sport of all kinds, and very good schools. Premium for share £4,050. Ingoing partner must be over 35 years of age, married and preferably English.
13. MIDDLESEX.—OUTLYING SUBURB NEAR BORDER OF HERTS.—A one-third share is offered, owing to the retirement of one of two Partners in an old-established very sound good middle and working-class Practice offering exceptional prospects of increase. Gross cash receipts for the immediate past 12 months £3,250. Panel of about 1,600. Visits from 3/6. Midwifery from 3 gns., about 20 to 30 cases yearly. Suitable house, with 2 reception, 4 bedrooms, etc. Electric light. Garden. Garage. Price for freehold £1,250, £250 down and balance by arrangement. Ingoing partner will reside in new and rapidly developing district where extensive building operations are in progress. Premium £2,600.
14. NEW ZEALAND.—NORTH ISLAND.—Well-established general Practice situated in a thickly populated and prosperous dairy farming district bringing in over £2,200 p.a. Minimum fee 10/6, plus mileage charged at the rate of 5/- a mile after 2 miles one way. Average midwifery fee 6 gns. There is a private hospital with 9 beds. Purchaser must be able to do major surgery as surgery forms a considerable part of the work. Fees charged at the rate of usual B.M.A. standard. Very good bungalow house with beautiful garden of about an acre, containing dining and drawing rooms, 2 bedrooms, sleeping porch, bathroom, etc., kitchen, scullery. Premium £2,000, to include both practice and house, drugs, fittings, etc., and diathermy apparatus.
15. LANCS.—LARGE TOWN.—Good-class private and panel PRACTICE established over 60 years and held by Vendor for past 7 years. Gross cash receipts for the immediate past 12 months £3,000. Panel of 1,800. Visits 2/6 upwards, with medicine extra. Midwifery from 3 gns., about 40 cases yearly. Expenses are moderate. Very good house, in best position in the town, containing 2 reception, 5 bedrooms, etc., and good professional accommodation. Can be rented at £100 p.a. Good schools and sport of all kinds.
16. NORTH-EAST COAST.—FAVOURITE SEASIDE RESORT.—Well-established mixed-class PRACTICE producing approximately £1,600 p.a. Panel brings in with mileage about £300 p.a., and appointment worth £100 p.a. Fees 3/6 to 7/6. Good house with 5 bedrooms, etc. Garden and garage. Price for freehold £2,250. Sport of all kinds. Good schools. Premium 1½ years' purchase.
17. EAST LONDON. — Recently established working-class PRACTICE estimated to be bringing in approximately £380 p.a. Panel of 130. Suitable shop-fronted premises can be rented at reasonable figure and expenses very low. Premium £350.
18. LONDON, N.W.—Good middle and working-class PRACTICE established 43 years and held by Vendor (who is retiring) for past 40 years. Average gross cash receipts for last 3 years £1,460. Panel of 1,500. Visits 3/6 upwards. Midwifery 3 gns. upwards, about 12 cases yearly. Very good freehold house on 3 floors containing 3 large reception rooms, 6 bedrooms, etc, and professional rooms Garage. Good garden. Premium for Practice and house £7,000.
19. LANCS.—Middle and working-class PRACTICE situated within about 10 miles of Manchester. Gross cash receipts average approximately £925 p.a. including panel of 1,000. Visits and medicine 4/- upwards. Well-situated house held on lease at rental of £75 p.a. Premium 1½ years' purchase, or nearest offer.
20. CITY PRACTICE. — Very old-established PRACTICE worked as a "lock-up" and held by the Vendor (who is giving up owing to ill-health) for the past five years. Average gross cash receipts for last 3 years £907. Fees 10/6 and 21/-. Suitable surgery premises can be rented on lease. Premium £700.
21. DEATH VACANCY.—LONDON, EAST.—Very old-established mixed general Practice; non-panel, and offering scope for increase Gross cash receipts for the last twelve months approximately £600, but previously over £1,000 p.a. Fees from 2/6, visits from 5/-. Appointments consist of two Clinics, which might be transferred, the receipts from which are not included. House is in main road, contains 2 reception, 3 bedrooms, 2 attics, etc. Freehold can be purchased, or can be rented at £100 p.a. Premium £400.
22. LIVERPOOL. — Well-established mixed-class PRACTICE, in rapidly increasing area, and having good scope for further development. Gross cash receipts over £600 p.a., including panel of 682, and clubs worth about £150 p.a. Compact house, in first-class order, containing 3 reception, 5 bedrooms, etc. Garage. Electric light. Well-stocked garden. Price for freehold £1,250, £200 down and balance on mortgage. Premium £900.
23. HANTS.—PARTNERSHIP. — A two-eighths share, producing about £800 p.a., is offered in a very good mixed-class Practice in very attractive residential district. Average gross cash receipts £3,200 p.a Panel of about 1,800. Suitable house available. Premium for share two years' purchase.
24. OPHTHALMIC AND GENERAL PRACTICE SITUATED IN GOOD RESIDENTIAL LONDON DISTRICT.—Very old-established and held by the Vendor for last 13 years. Average gross cash receipts for past 3 years £900. Selected panel of 513, and appointments worth £30 p.a. Patients are good class and no bad debts. Fees for general work 10/6, and for ophthalmic work 1½ and 2 gns. Good scope for private practice, and particularly for acquiring a larger panel if wished. Suitable house, with dining and drawing room, consulting room, 3 bedrooms, bathroom, kitchen, etc. Electric light and garden. Basement sublet. Rent on lease, inclusive of rates and taxes £185 p.a. Premium £1,800. Vendor retiring.
25. LONDON, EAST.—Middle and working-class PRACTICE, producing about £900 p.a. including panel of 520. Fees 2/6 upwards. Suitable house can be rented at £100 p.a. Premium 1½ years' purchase.
26. MIDLANDS COUNTY TOWN.—Old-established good middle and working-class PRACTICE held by the Vendor, who is retiring, for the past 20 years. There is good scope for increase. Average gross cash receipts for past 3 years nearly £2,200. Panel of 2,400 and P.M.S. over £200 p.a. Fees 3/6 to 1 guinea. Very little midwifery. Suitable house, with 2 reception, 5 bedrooms, etc., and professional rooms. Electric light. Small garden. Price (freehold) £2,000. Premium 2 years' purchase.

ASSISTANTS REQUIRED.—(1) LONDON, S.E. Outdoor. Single. £300 p.a., plus rooms and board. (2) LEICS. Indoor, with possibility of Partnership later. £300 p.a., plus £50 car allowance. (3) NORWICH. Outdoor £400 p.a. with percentage of profits. (4) SUSSEX COAST TOWN. Indoor £300 p.a. or £400 p.a. outdoor. (5) NEWCASTLE-ON-TYNE. Indoor £300 p.a. (6) LONDON, EAST. Indoor £300 p.a. (7) CARDIFF. Outdoor to manage branch Practice, single, salary to be arranged. (8) HULL. Indoor £300 p.a., plus £52 p.a. car allowance. (9) NORFOLK. Indoor £300, or outdoor £450 p.a., plus car allowance. (10) PORTSMOUTH. Indoor £250 p.a. to commence. (11) HANTS. Outdoor £400 p.a. (12) CORNWALL. Outdoor £375, plus £50 car allowance. (13) BRISTOL. Indoor £300 p.a. (14) LONDON, E. Indoor £25 per month. (15) London, N. £375 p.a., with rooms and attendance. Must be Scottish.

The Agency has made arrangements for special facilities, on very favourable terms, to be afforded to approved purchasers for the advance of part of the premium for any suitable practice or partnership. Full details on application.



The Lister Institute
OF PREVENTIVE MEDICINE

Therapeutic Substances Act, Licence No 9

Compound Catarrhal Vaccine

In catarrhal conditions of the respiratory passages mixed infections are found more often than pure infections with one type of organism. *Bacillus influenzæ*, Pneumococcus, and *Micrococcus catarrhalis* are believed to be the commonest primarily infecting organisms, but Streptococcus and Staphylococcus seem to be responsible for many of the secondary infections. A mixed vaccine has been prepared from these five kinds of bacteria. It is generally given as a prophylactic but may also be used in acute respiratory infections.

DOSAGE—Prophylaxis: 1st dose, 50 million *B. influenzæ*, 10 million *Streptococcus*, 25 million *M. catarrhalis*, 25 million *Pneumococcus*, 125 million *Staphylococcus*. Subsequent doses at intervals of 7 to 10 days, gradually rising to 8 times the original dose. Then 4 to 8 times the initial dose every 4 to 8 weeks.

Treatment—$\frac{1}{5}$ to $\frac{1}{10}$ of prophylactic doses.

PRICES—

Ampoules containing	235 million organisms per c.c., each	2/6
" "	470 " " " "	2 6
" "	940 " " " "	2/6
" "	1,880 " " " "	2/6
10 c.c. rubber-capped vials containing	470, 940, or 1880 million organisms per c.c., each	15/-
25 " "	" " " " " "	25/-

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Printed and published by the British Medical Association, at their Office, Tavistock Square, in the Parish of St. Pancras, in the County of London.